



ORDER NO. CRT 1267

CASSETTE CAR STEREO WITH FM/MW/LW ELECTRONIC TUNER

# **KEH-6101B**

X<sub>1</sub>B

• This additional service manual is designed to be used together with Model KEH-6100B/EW Service Manual (CRT1255). Refer to it for finding parts numbers and circuit description, etc. which are not shown in this manual.

# **PACKING METHOD**

Parts List (Page 60)

Mark	No.	Description	KEH-6100B/EW Part No.	KEH-6101B/X1B Part No.
1 Carton		Carton	CHG1687	CHG1721
	2 Owner's Manual		CRD1321	CRD1327
		Installation Manual	CRD1323	
	3	Styrofoam	CHP1258	CHP1264
	4	Styrofoam	CHP1257	CHP1263
	5	Cover	CEG-236	CEG-173
	6	Accessory Assy	CEA1471	CEA1488
	6-3	Strap	CNF-111	
	6-6	Bracket		CNF-975

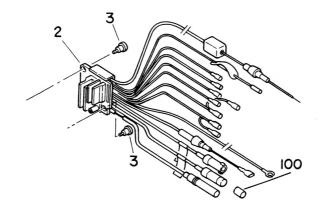
- Dolby and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
- Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.



# EXPLODED VIEW

Parts List (Page 56) NSP:No Spear Part

			KEH-6100B/EW	KEH-6101B/X1B
Mark	No.	Description	Part No.	Part No.
	1	Вох	CNB1289	CNB1331
	2	Cord Assy	CDE2242	CDE2535
•	6	Tuner Amp Unit	CWM2088	CWM2089
	8	Heat Sink	NSP	NSP
	27	Grille Unit	CXA3139	CXA3141
•	36	Quick Release	CXA3186	CXA3315
	42	Handle Assy Handle	CNC3016	CNC3197
	61	Insulator	NSP	NSP
	6 2	Cord Assy	CDE2508	CDE2826
	66	Case	NSP	NSP
	67	Insulator	NSP	NSP
	78	Insulator	NSP	NSP
•	8 4	FM/AM Tuner Unit	CWE 1 1 6 7	CWE1182
•	90	Key Board Unit	CWM2190	CWM2106
-	100	Сар		CNV1455







• KEH-6100SDK



ORDER NO. CRT 1255

CASSETTE CAR STEREO WITH FM/MW/LW ELECTRONIC TUNER

# KEH-6100B EW KEH-5100B EW KEH-5100B EW KEH-5101B EW

#### Note:

- See the separate manual CX-166 (CRT1094) for the cassette mechanism description.
- Dolby and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
- Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.

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### SAFETY INFORMATION

#### WARNING!

Lithium batteries. Danger of explosion. Replacement must be done by qualified personnel and only by following the instructions given in the service manual.

This warning is stated on the product or in the operating instructions. When replacing the lithium batteries, follow the note below.

Dispose of the used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire. The battery used in this device may present a fire or chemical hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate. Replace only with the same Part Number. Use of another battery may present a risk of fire or explosion.

Note: The lithium battery installation position is shown in the exploded view and the P.C. board pattern.

#### ADVARSEL!

Lithiumbatteri — Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

Denne advarsel or angivet på produktet eller i brugsvejledningen. Ved udskiftning af lithium batterierne følges nedenstående anveisning.

Batterierne må kun udskiftes med batterier af samme type og mærke.

#### **VARNING**

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

Denna varning finns på apparaten eller i bruksanvisningen. Följ nedanstående anvisningar vid byte av litiumbatterier. Batterierna får endast bytas ut mot litiumbatterier av samma typ och fabrikat.

# 1. DISASSEMBLY

- Quick Release Handle Assy
- 1. Remove two screws.
- 2. Remove quick release handle assy.

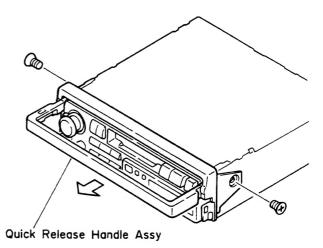


Fig. 1

#### • Case

- 1. Insert and turn a flat screwdriver to remove case.
- 2. Raise case to remove.

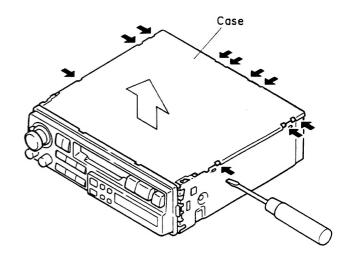


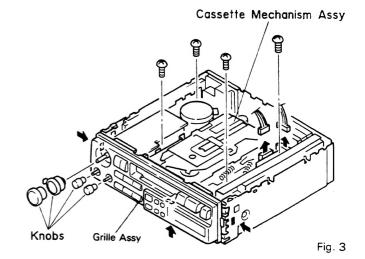
Fig. 2

#### • Grille Assy

- 1. Remove four knobs.
- 2. Press tabs at three locations indicated by arrows, and pull out grille assy.

#### • Cassette Mechanism Assy

- 1. Disconnect two connectors.
- 2. Remove four screws, and then remove cassette mechanism assy.



#### • Chassis Unit

- 1. Remove two screws A and five screws B.
- 2. Unbend tab at location indicated by arrow.
- 3. Raise up on tuner amp unit to remove it from chassis unit. At this time, disconnect cord from chassis unit.

#### Note

When replacing the cord assy after it has been removed, apply some paint to screw after screwing it in to prevent it from loosening.

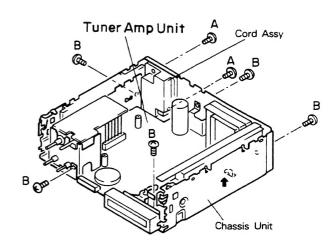
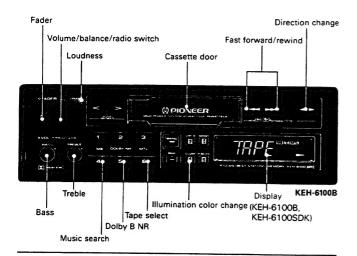
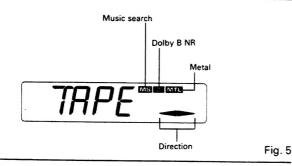


Fig. 4

## 2. USING THE TAPE DECK





#### Before attempting operation...

- Reduce the volume by turning the volume control knob to the left
- Set the fader control to the left horizontal.
- Insert a tape into the deck to turn the power on and automatically begin playback. Even if the radio is on, the unit will automatically switch to and begin tape playback.
- Adjust the volume and balance. To adjust the balance, first pull the knob until a click is heard. After setting to the desired level, push the knob in again to its original position.
- 3. Adjust the tone.
- 4. When tape playback reaches the end of the tape, playback will automatically switch from the side being played to the opposite side (ie. Side A to Side B or vice versa) (Auto-reverse). To eject the tape during playback, simultaneously press the fast forward and rewind buttons.
- A loose or warped label on a cassette tape may interfere with the eject mechanism of the unit or cause the cassette to become jammed in the unit. Avoid using such tapes or remove such labels from the cassette before attempting use.
- Do not try to eject the cassette immediately after insertion, as it will cause malfunction. Wait a few seconds.

#### • Fast Forward/Rewind

Since the transport can be in either direction, both the left and right high-speed tape transport buttons can be regarded as fast forward/rewind buttons.

For fast forward, press the high-speed tape transport button that corresponds to the direction that is shown by the direction indicator. When the end of the tape is reached, playback will automatically begin from the opposite side of the tape (Auto-reverse).

For rewind, press the button that is opposite that of the direction shown by the direction indicator. When the end of the tape is reached, playback will automatically begin from the beginning of the same side of the tape (Auto-replay).

Fast forward and rewind can be terminated by pressing the respective opposite high-speed tape transport button.

#### ● Direction Change Button

This button is used to switch from one side of the tape to the other (from Side A to Side B or vice versa).

#### Dolby B NR Switch

Press when playing a tape recorded with Dolby NR.

#### Tape Select Switch

This switch is used to switch to the proper mode for the tape being used and should be depressed when using chrome or metal tapes.

#### Music Search

#### • Returning to the beginning of selection A

Press the music search button and then the high-speed tape transport button for the direction opposite that shown by the direction indicator. Playback will automatically start from the beginning of selection A.

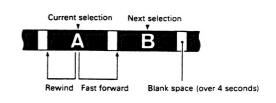
#### Moving from selection A to selection B

Press the music search button and then the high-speed tape transport button that corresponds to the direction shown by the direction indicator. Playback will automatically start from the beginning of selection B.

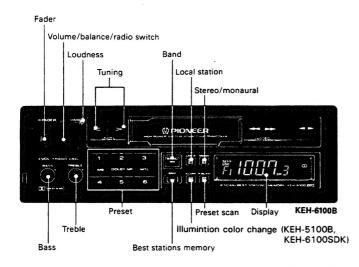
To enable regular fast forward/rewind operations, press the music search button again to turn the function OFF. The following errors will cause the music search function to operate improperly, even though the unit is not malfunctioning.

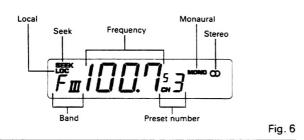
- function to operate improperly, even though the unit is not malfunctioning.

  Unrecorded "blank" portions between selections is less than 4 seconds the blank portion cannot be detected by the unit
- blank portion cannot be detected by the unit.
   Pauses in recorded conversations are longer than 4 seconds the unit reads these as blanks between selections.
- Portions are recorded at very low volume for more than 4 seconds the unit reads these as blanks between selections.



# 3. USING THE RADIO





#### • Before attempting operation...

- Reduce the volume by turning the volume control knob to the left.
- Set the fader control to the left horizontal.
- Press the radio switch to turn on power and display the frequency.
- 2. Press the band switch to select the band.
- Switching between FM and MW/LW is controlled by the band switch. Switching between LW and MW is accomplished using the tuning button. The MW band is from 531 kHz to 1,602 kHz, and the LW band is from 153 kHz to 281 kHz.
- Press both ends of tuning button and the seek tuning indicator will appear on the display.
- Press either the left or right side of the tuning button to tune in the desired frequency. (Pressing the right side will increase the frequency.)
- Adjust the volume and balance. To adjust the balance, first pull the knob until a click is heard. After setting to the desired level, push the knob in again to its original position.
- 6. Adjust the tone.

#### • To enter a frequency into the preset memory...

7. Hold down one of the preset buttons (1-6) for approximately two seconds. The frequency is stored in memory (assigned to the preset button pressed) once the preset number stops flashing on the display.

Six FM1 frequencies, six FM2 frequencies, six FM3 frequencies and six MW and LW frequencies can be entered.

#### Best Stations Memory Button

Automatically tunes strong frequencies and assigns them to preset buttons 1 through 6 for one-touch automatic tuning. The best stations memory function is activated by pressing this button for approximately 2 seconds. The best stations memory function is indicated by ——— flashing on the display, and this function can be canceled by pressing the band switch. The frequency display returns once the best stations memory function is complete. The frequency displayed at this time is of the strongest station assigned to preset button 1 by the best stations memory function.

- 6 best (strongest) frequencies are momorized in the 6 preset buttons in the order of their strength, the strongest one being assigned to preset button 1.
- The frequencies previously assigned to the preset buttons are retained when 6 frequencies cannot be located.
- The best stations memory is in operation while —— is flashing on the display.

#### • Stereo/Monaural Switch

This switch is used to change from stereo to monaural for FM broadcasts, and is usually left in the stereo position. When a stereo broadcast is received, the stereo indicator will illuminate. With the "Automatic Reception Control" (ARC) function, stereo broadcasts can always be enjoyed in their optimal reception mode. If excessive noise is present, pressing this switch allows monaural reception of the broadcast.

#### Local Station Switch

Pressing this switch increases the seek threshold level so that only relatively strong stations can be tuned in (local indicator will illuminate on the display). Local seek threshold level can be selected among four levels for FM and two levels for MW and LW.

Holding this switch down for approximately 2 seconds and then pressing the right side of the tuning button changes the display from L-1, L-2, L-3 to L-4. Pressing the left side of the tuning button changes the display from L-4, L-3, L-2 to L-1. (L-1 and L-2 for MW/LW). The bigger the number, the higher the seek threshold becomes and only relatively strong stations can be tuned in.

#### Fader Control

This control is used to adjust the balance between the front and rear speakers when using a 4-speaker system. Turning the control upwards decreases the volume of the rear speakers, while turning it downwards decreases the volume of the front speakers. With 2-speaker systems, set this control to a horizontal position.

#### Loudness Switch

When playing back a tape or listening to the radio at low volume, the low and high tones are emphasized and more clearly heard by pressing this switch.

#### Seek Tuning

Press both ends of tuning button and tuning to the next higher or lower broadcast on the band can be accomplished automatically by simply pressing either the right or left side of the tuning button. FM frequencies change in 50 kHz steps while those in the MW and LW bands change in 9 kHz steps.

#### **Preset Scan Tuning**

Pressing the preset scan button (CH indicator flashes) causes previously stored frequencies to be tuned in sequentially for eight seconds each. Press again when the desired frequency is tuned in to cancel preset scan tuning.

#### **Preset Tuning**

Pressing the preset button instantly tunes in the frequency programmed in the memory for that button.

#### **Manual Tuning**

When manual tuning is employed, FM frequencies change in 50 kHz steps, LW frequencies change in 1 kHz steps, and MW frequencies change in 9 kHz steps.

- Press both ends of tuning button and the seek tuning indicator will disappear from the display.
- Change the frequency by pressing either the left or right side of the tuning button. Pressing the button once will change the frequency one step (see above). Continuously depressing either side of the button will successively change the frequency at the prescribed step.

#### Changing Illumination Color (KEH-6100B, KEH-6100SDK)

To change illumination color, press the button Illumination Color Change. Pressing allows change from green to red and vice versa.

#### Using Input Terminal (KEH-6100B, KEH-6100SDK)

To operate a CD player (sold separately) using this unit, connect the player to Input terminal. Before playing a CD, however, be sure that the cassette tape is ejected and the radio is turned off. "CD" appears on the display when the player is operating.

#### Note on LW Band Seek Tuning

The following shows changes in LW BAND broadcast frequency steps enacted by WARC/1979. The underlined italic figures indicate changes.

#### A. Up to January 1986

155-164-173-182-191-200-209-218-227-236-245-254-263-272-281

#### B. From February 1986

<u>153-162-171-180-189</u>-200-209-218-227-236-245-254-263-272-281

#### C. From February 1988

153-162-171-180-189-<u>*198-207-216-225-234</u>-2*45-254-263-272-281</u>

#### D. From February 1990

153-162-171-180-189-198-207-216-225-234-243-252-261-270-279
The LW BAND SEEK operations of this unit are performed in 9 kHz steps starting from 153 kHz. In the case of C, the first ten frequencies are identical to each station being broadcasted, while the remaining five are shifted (2 kHz each). Consequently, manual tuning (in 1 kHz steps) and seek tuning should be used together to tune in the desired LW broadcast. It is also suggested that your favorite LW stations will be memorized for instant recall.



# 4. SPECIFICATIONS

General
Power source 14.4 V DC (10.8 — 15.6 V allowable)
Grounding system Negative type
Max. current consumption
Dimensions (chassis) 180(W) × 50(H) × 150(D) mm
(front face)
Weight
Amplifier
Maximum power output
(KEH-6100B, KEH-5100B)
(KEH-5101B)
Continuous power output
Load impedance
Max. output level/output inpedance (pre out)
(KEH-6100B, KEH-5101B)
Tone controls (bass)
(treble)
Loudness contour +12 dB (100 Hz), +7 dB (10 kHz)
(volume: -30 dB)
Tape player
Tape Compact cassette tape (C-30 — C-90)
Tape speed 4.76 cm/sec. (+0.14 cm/sec., -0.05 cm/sec.)
Fast forward/rewind time Approx. 100 sec. for C-60
Wow & flutter 0.13% (WRMS)
Frequency response
(KEH-6100B, KEH-5101B, KEH-5100B)
Metal: 40 - 17,000 Hz (±3 dB)

Stereo separation
(KEH-6100B, KEH-5101B, KEH-5100B)
Metal: Dolby B NR IN: 66 dB (IEC-A network)
Dolby NR OUT: 60 dB (IEC-A network)
FM tuner
Frequency range 87.5 — 108 MHz
Usable sensitivity
50 dB quieting sensitivity 16 dBf (1.7 $\mu$ V/75 $\Omega$ , mono)
Signal-to-noise ratio
Distortion 0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response 50 - 15,000 Hz (±3 dB)
Stereo separation 40 dB (at 65 dBf, 1 kHz)
MW tuner
Frequency range 531 - 1,602 kHz
Usable sensitivity
Selectivity 50 dB (±9 kHz)
LW tuner
Frequency range 153 — 281 kHz
Usable sensitivity
Selectivity 50 dB (±9 kHz)

#### Note:

Specifications and the design are subject to possible modification without notice due to improvements.



# 5. CONNECTION

#### 2-speaker system Remove the cap when connecting this cord to the power amp. CD player (sold separately) Rea External input output 15 (sold separately) To red lead (for accessory power supply) of CD player. Remove the cap when connecting this cord to the CD player. Antenna Jack Red ® Black (ground) To electric terminal controlled by ignition switch (12 V DC) ON/OFF. To vehicle (metal) body. Blue/White To auto-antenna power terminal (Max. 300 mA 12 V DC). Fuse holder KEH-6100SDK Green/red Gray/red No connection in this Green/black Gray/black Left speaker Right speaker Gray ⊕ Θ

Green/black

Gray/black

Fig. 7

#### 4-speaker system 1

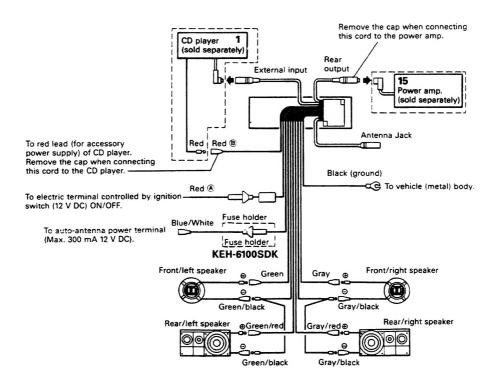


Fig. 8

#### 4-speaker system 2

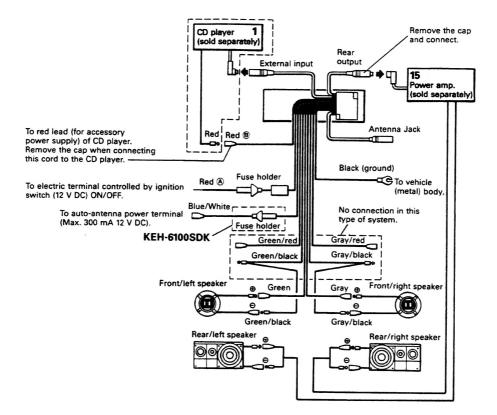
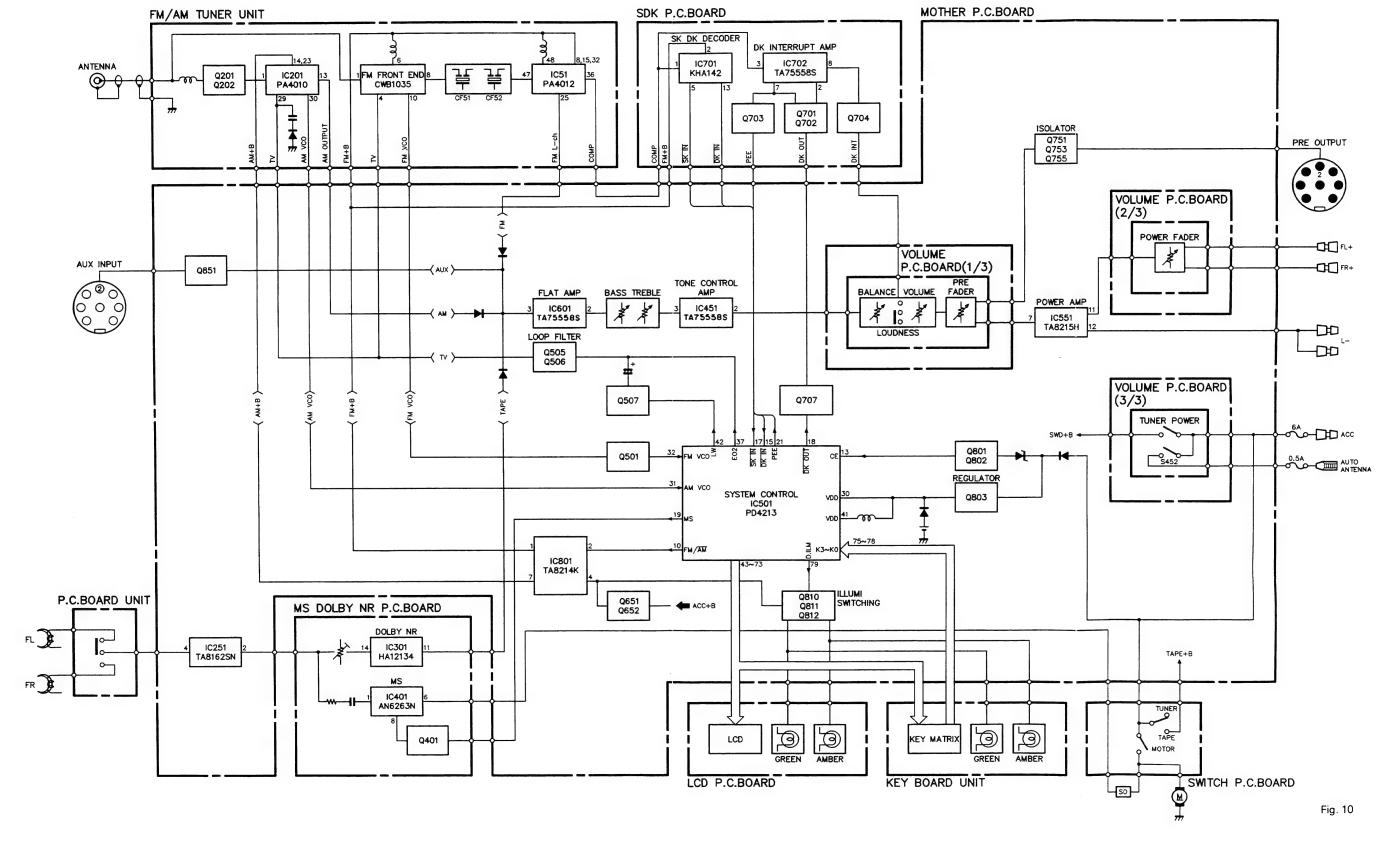


Fig. 9

# 6. BLOCK DIAGRAM



# 7. ADJUSTMENT

#### NOTICE:

Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.

Z: Output impedance of SSG.

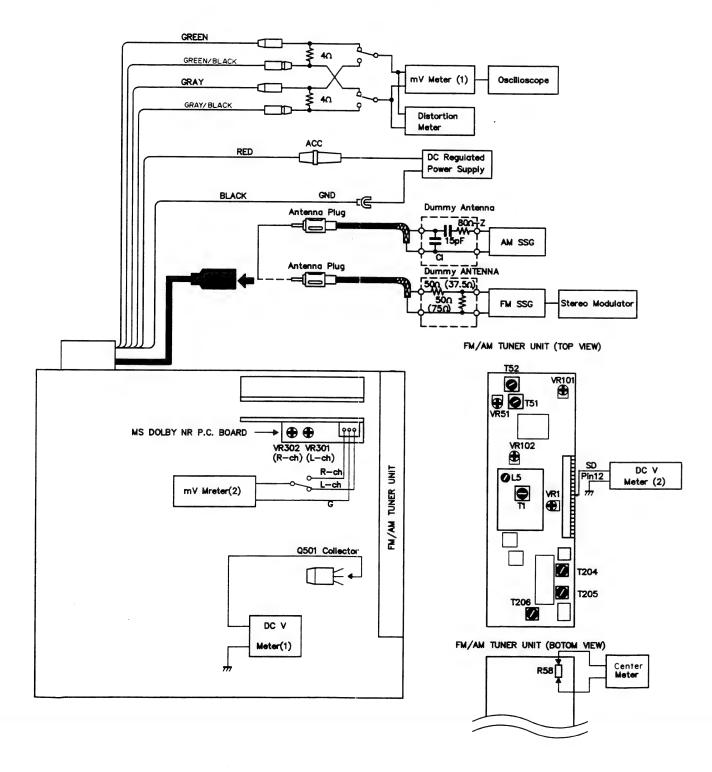


Fig. 11

FM ADJUSTMENT ※ Stereo MOD.: 1kHz, L+R=90%, Pilot=10%

	No.	FM SSG (400	Hz, 100%)	Displayed	Adjusting	Adjustment Method
		Frequency (MHz)	Level (dBμV)	Frequency (MHz)	Point	(Switch Position)
l F	1	98.1	60	98.1	T51	Center Meter:0
	2	98. 1	6 0	98. 1	T 5 2	Distortion Meter:Minimum
	3	Repeat No. 1-2 a distortion mete				dicates the O output and
Fro-	1			108.0	L 5	DC V Meter: 6.2 ± 0.2V
End	2			87.5		Verify that DC V Meter is more than 2.1 $\pm$ 0.6 V
	3	98.1	8	98.1	Т1	Distortion Meter:Minimum
Soft	1	98.1	60	98.1		mV Meter(1):A dB
мите	2	98.1	10	98.1	VR102	mV Meter(1):A-3dB
ARC	1	98.1%	3 5	98.1	VR101	mV Meter(1):Separation 5dB
SD	1	98. 1	17	98.1	VR51	DC V Meter(2):Approx. 5V
	2	98.1	16	98.1		Verify that DC V Meter (2) is approx. OV.
	3	98.1	55	98.1	VR1	DC V Meter(2):Approx. 5V
	4	98.1	5 4	98.1		Verify that DC V Meter (2) is approx. OV.

# MW/LW ADJUSTMENT (WG, EW)

	No.	Na	Na	No	AM SSG (400Hz. 30%)		Displayed	Adjusting	Adjustment Method
		Frequency (kHz)	Level (dB μ V)	Frequency (kHz)	Point	(Switch Position)			
Tun- ing <b>V</b> olt	1	(MW MODE)		1,602		Verify that DC V Meter (1) is less than 6.5V.			
	2	(LW MODE)		153		Verify that DC V Meter (1) is more than 2.0V.			
1 F	1	999	20 — 25	999	T204, 205, 206	mV Meter(1):Maximum			

# DOLBY NR ADJUSTMENT

No.	Cassette Tape	Adjusting Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz, 200nwb/m)	VR301 (Lch) VR302 (Rch)	mV Meter (2):-7.2dBs (337mV) (DOLBY NR Switch:OFF) (METAL Switch:OFF)

#### • ICs and Transistors





2SB1243

2SC2498









2SA1162 2SC2712 2SC4116

2SK330

2SK435









DTA114EL DTC124EL DTC314TL

DTA114TK DTC124EK

DTC124EL DTC124ES

DTA114EL DTB114ES





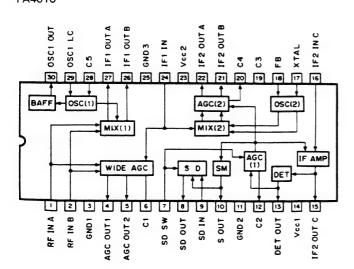






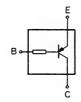
DTC124EK

PA4010

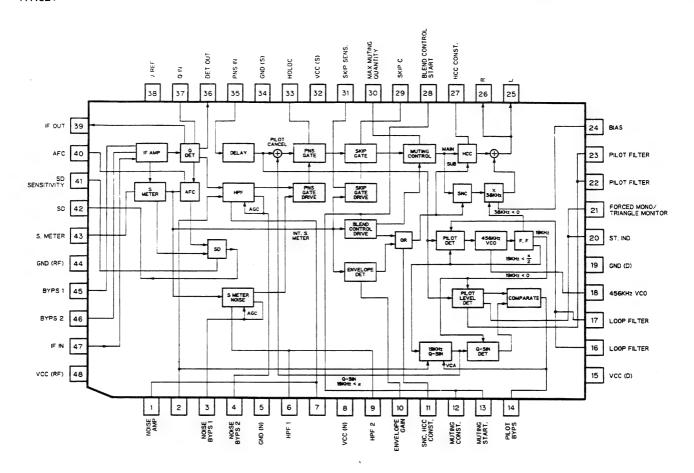


DTC124TS DTC314TL

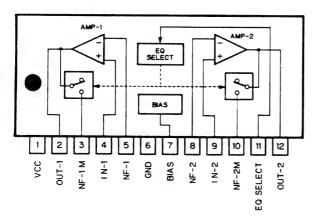
DTA114TK



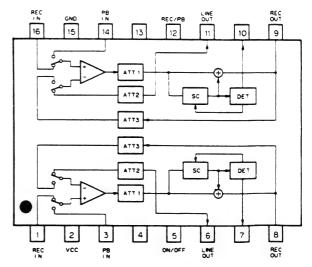
PA4021



#### TA8162SN

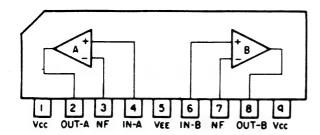


#### HA12134

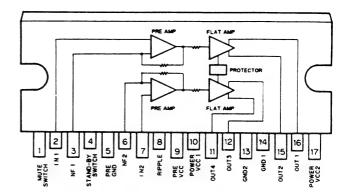


#### KEH-6100SDK

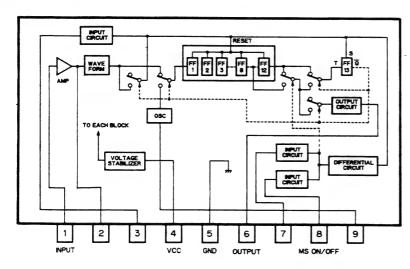
TA75558S



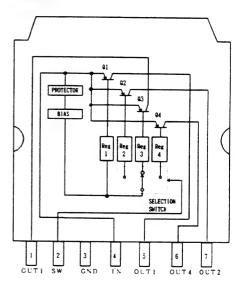
TA8215H



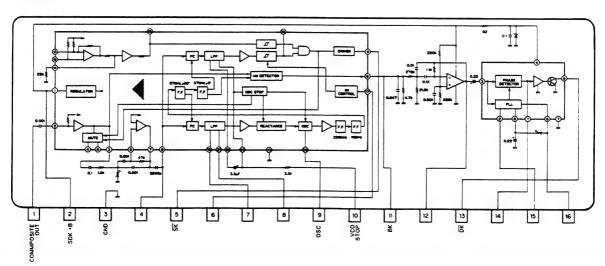
AN6263N



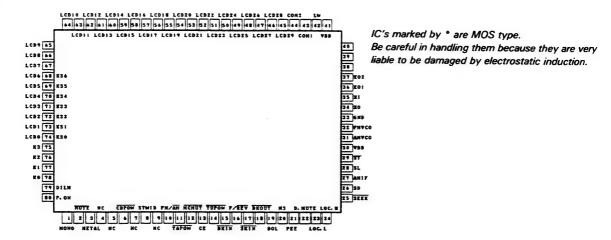
TA8214K



KHA142







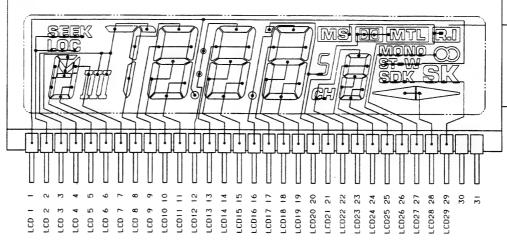
#### • Pin Function (PD4213)

Pin No. Pin Name I/O			Function and Operation				
1	MONO	Output CMOS	Controlled by MONO key. "H": MONO "L": AUTO				
2	MUTE	Output CMOS	Muting signal output. "L": MUTE ON				
3	METAL	Output CMOS	Controlled by MTL key. "H": METAL "L": NORMAL				
4,5	NC		Not used.				
6	CDPOW	Input	CD (AUX) power supply sensor. "L": CD (AUX) power ON				
7	NC		Not used.				
8	STWID	Output CMOS	Not used.				
9	NC		Not used.				
10	FM/AM	Output CMOS	Controlled by BAND Button. "H": FM "L": AM				
11	TAPOW	Input	Tape power supply sensor. "L": TAPE POWER ON				
12	MCMUT	Input	Mech muting input. "L": MUTE ON				
13	CE	Input	Device signal input. H level druring normal device operation, L level when device is r being used. PLL is in disable status while this terminal is L level. For models without clocks, internal clock and CPU operation is halted while this terminal is L level, and memory is maintained by low demand current (10µA MAX). Change of CE terminal f L to H results in device reset and the program to start from address 0.				
14	TUPOW	Input	Tuner power supply sensor. "L": TUNER POWER ON				
15	DKIN	Input	Inputs message recognition signal (DK) sent during traffic information broadcast only. Since the DK signal is sent by amplitude modulation of a 57 kHz subcarrier wave by 125 Hz, it counts the input signals in accordance with the program. A DK signal is judged as being preset when 125 Hz is not detected twice consecutively. DK signal is judged as not being preset when 125 Hz is not detected 4 times consecutively. An interrupt operation is preformed when a DK signal is judged as being present. This count is only performed in the SDK mode.				
16	F/REV	Input	This pin accepts a tape motion signal. When this is H level the"▶" (FWD) indicator lights; when L level, the "◄" (REV) indicator.				
17	SK IN	Input	Determines whether traffic information is being broadcast and inputs a broadcast de signal (SK). Broadcast is detected when input signal is L level, and "SK" indicator is played. Besides being used as the SDK mode auto tuning stop signal, SK input cont the SK mode and SK alarm functions.				
18	DK OUT	Output N-channel open drain	Output Controlled by DK IN (terminal #15) input signal. L level output when DK IN input signal. channel is detected as 125 Hz while SK IN (terminal #17) input is L level. Since DK IN measurements				

Pin No.	Pin Name	I/O			nction and Operation				
19	DOL	Output N channel Open drain	Dolby NR ON/OFF output terminal. While the deck is in operation, the contents of "Dolby ON/OFF memory" is output from this pin.  This pin goes H level when Dolby NR is on.						
20	MS	Output N channel open drain	Controlled by MS key. "H": MS ON						
21	PEE	Output CMOS	Alarm output terr ously for more th	Alarm output terminal. Alarm output when SK in SDK mode remains at H level continuously for more than 30 seconds.					
22	DMUTE	Output CMOS	Controlled by MC "H": DECK MUT	Controlled by MCMUT (terminal #12) input signal. "H": DECK MUTE ON					
23 24	LOC.L	Output	Halt sensitivity sv	vitching terminals	controlled by LOC a	and BSM keys.			
24	LOC.H	CMOS		DX-SEEK (PSCN)	LOC-SEEK	BSM-L	BSM-M (AM)		
			LOC.H	L	L	L	L		
			LOC.L	L	Н	L	Н		
				BSM-H	During broadcast reception				
			LOC.H	Н	L				
			LOC.L	н	L				
25	SEEK	Output CMOS	"L" level: SEEK, E	SSM, BSA and PSC	CN				
26	, S D	Input	Judges whether of	Judges whether or not a broadcast is present during auto tuning. A broadcast is judged as being present when H level is input.					
27	AMIF	Input	MW, LW band into	ermediate frequenc	cy input terminal.				
28	SL	Input	Station level analo	og voltage input. U	sed for broadcast of	letection in MV	V, LW band auto		
29	ST	Input	and stereo indicat	Inputs stereo broadcast detection signal. Stereo is detected when input signal is L level, and stereo indicator is displayed. Display is cleared when input signal is at H level. stereo indicator is OFF during mute signal output.					
30,41	VDD		Device power sup	ply terminal. 5 V :	± 10% voltage supp	lied.			
31	AMVCO	Input	Inputs 0.6-15 Mi This terminal is ac	Inputs 0.6—15 MHz (0.3 Vp-p MIN) local oscillator reference frequency (VCO output). This terminal is active when direct division system is selected.					
32	FM VCO	Input	Inputs 15-150 M This terminal is ac	Inputs 15—150 MHz (0.5 Vp-p MIN) local oscillator reference frequency (VCO output). This terminal is active when swallow counter method is selected.					
33	GND		GND terminal.						
34 35	XO XI		Quartz oscillator t	Quartz oscillator terminal connection terminal. 4.5 MHz quartz crystal used.					
36 37	E01 E02	Output CMOS 3 State	quency (VCO outp	PII error output. H level output by these terminals when division of local oscillator frequency (VCO output) is higher than reference frequency. L, level output when lower. This output is applied to a varactor diode, via an external low pass filter. EO1 and EO2 output identical ways forms.					
38									
40	NC								
42	LW	Output CMOS	Loop filter switchin	ng output terminal	•		· · · · · · · · · · · · · · · · · · ·		
43 44	COM1 COMO	Output CMOS	Common signal to Segments between	LCD. GND, 1/2VD these terminals an	D, VDD values (5m d LCD0—LCD29 wit	s interval) outp	out at 100 Hz cycle. tial difference are lit.		
45	LCD29	Output CMOS			CD. LCD display per				
74	LCD0	CIVIOS	uices.						
68	KS6	Output	Key return signal s	source output term	inal.				
74	KSO	CMOS							
75	К3	Input	Key matrix input to	erminal.		· · · · · · · · · · · · · · · · · · ·	777		
~ 78	κο								
79	D.ILM	Output CMOS	Controlled by ILL						
80	P.ON	Output CMOS	System power ON/OFF output. "H": SYSTEM POWER ON						

#### • LCD (CAW1069)

#### **SEGMENT**



#### **COMMON**

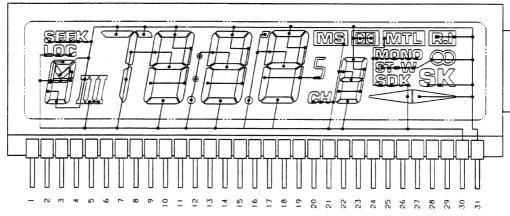


Fig. 12

COMI

#### • Front End Unit (CWB1035)

NOTE:

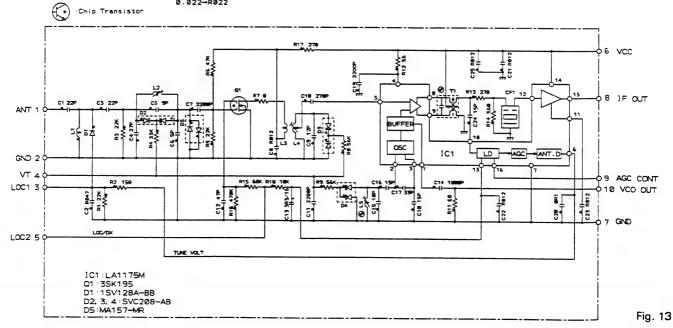
\*W. :Chip Resistor

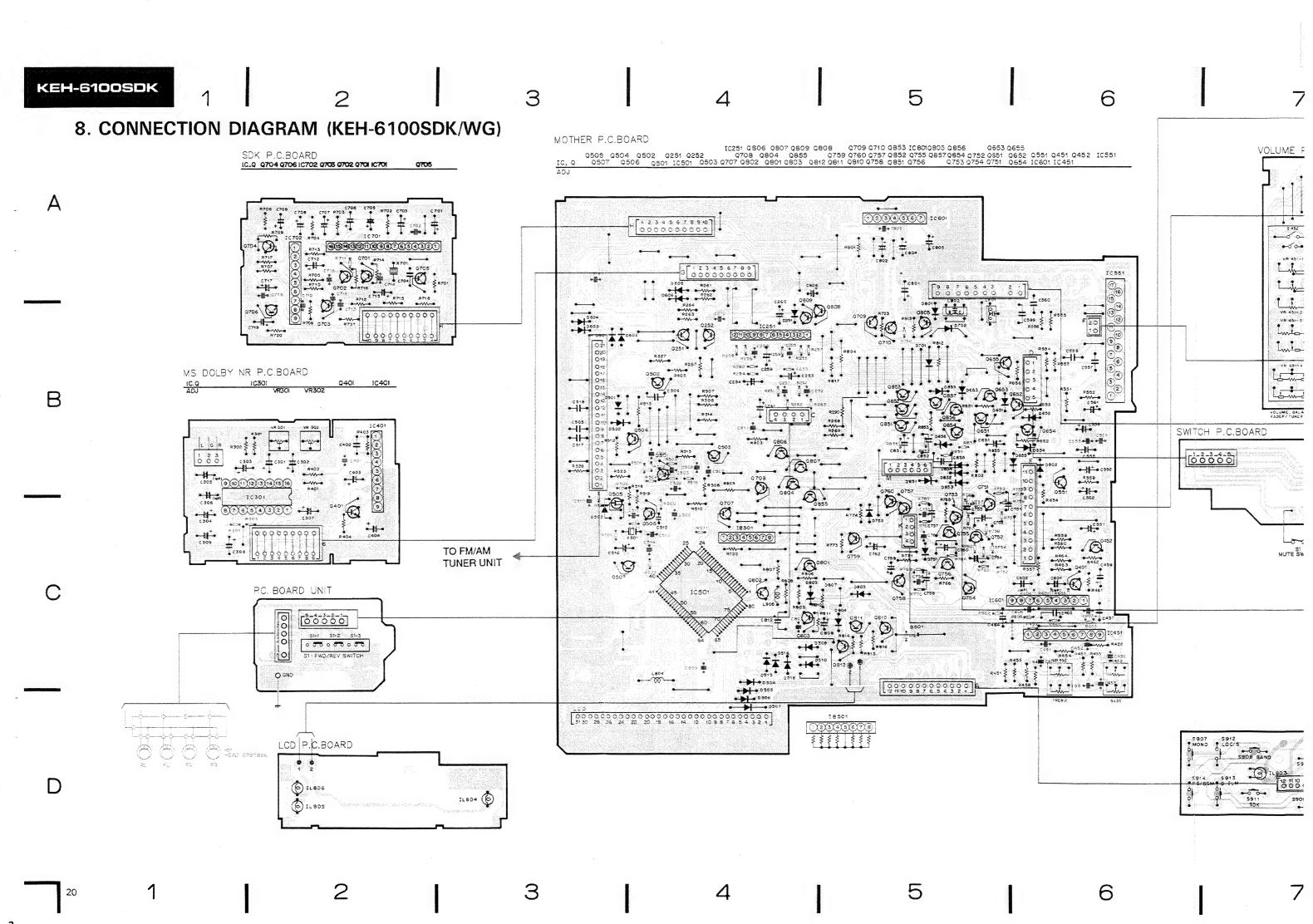
\*H⊢ :Chip Capacitor

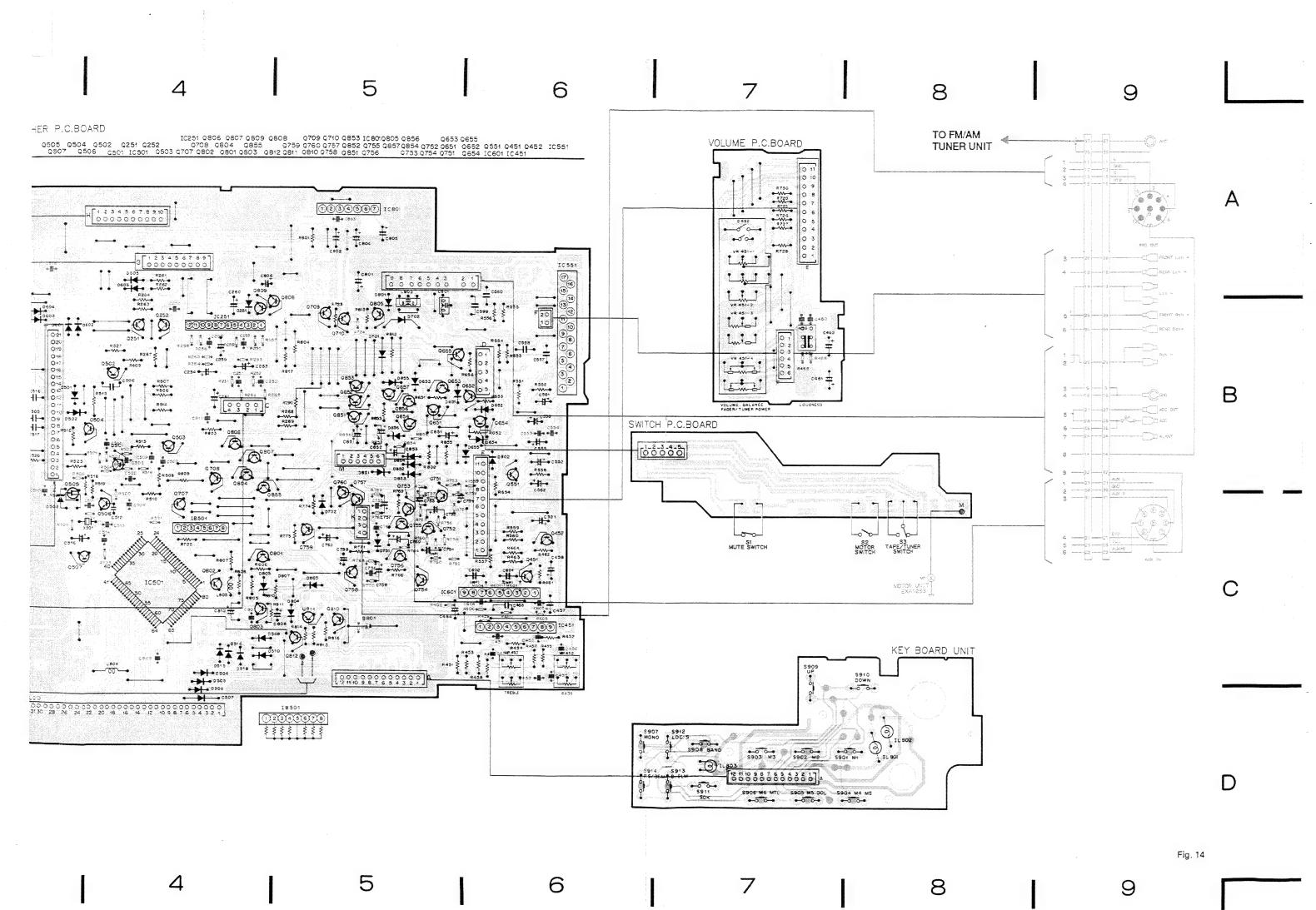
\*Q⊢ :Chip Diode

2.2→2R2

0.022→R022



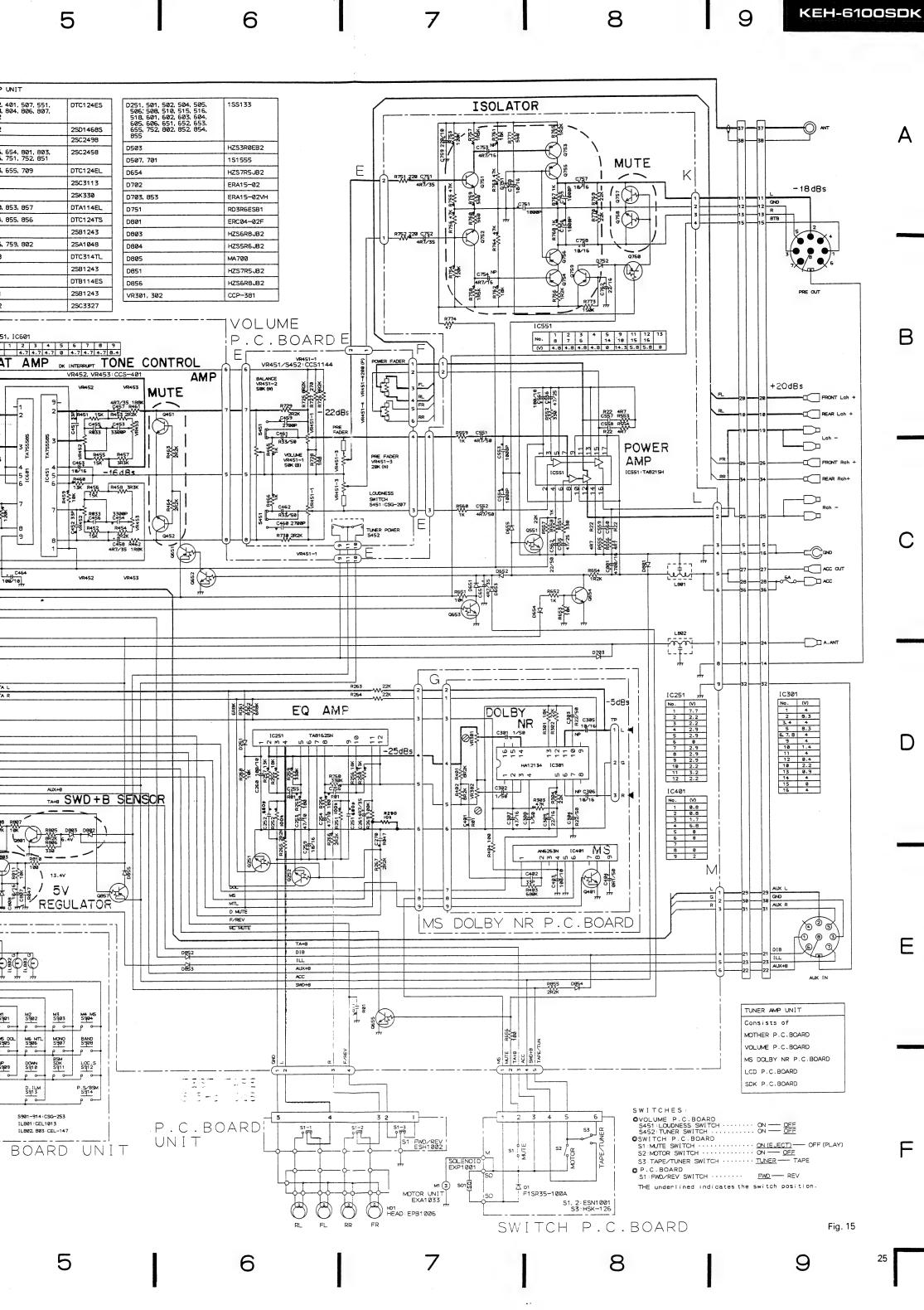


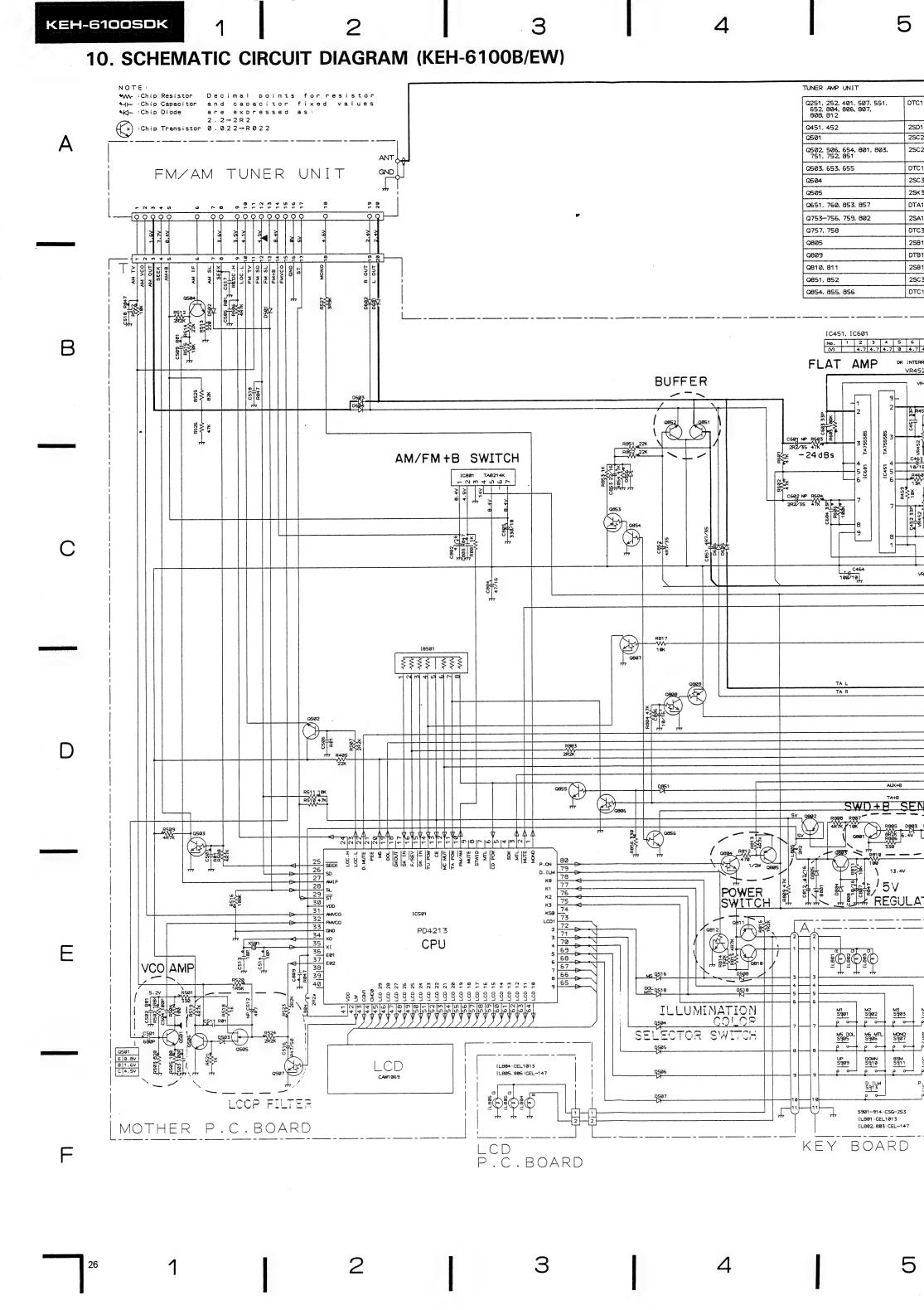


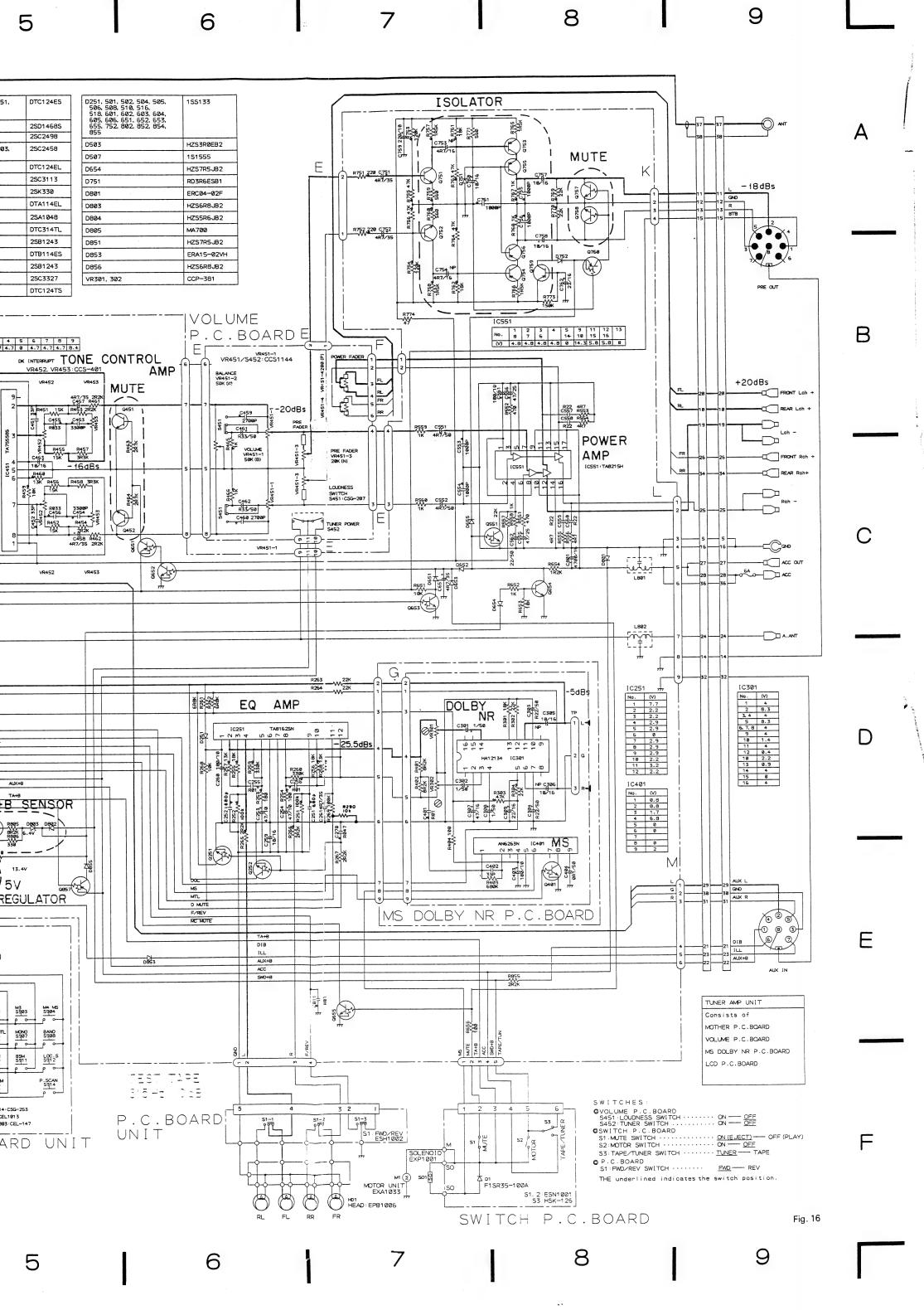
# 9. SCHEMATIC CIRCUIT DIAGRAM (KEH-6100SDK/WG) NOTE: TUNER AMP UNIT \*Www.:Chip Resistor Decimal points for resistor \*A|→:Chip Capacitor and capacitor fixed values \*A|→:Chip Diode are expressed as: No. 1 2 3 5 6 7 13 14 15 (V) 2.7 8.4 0 0 0 3.0 0 4.6 4.3 (V) 12.7 8.4 0 0 0 3.0 0 4.6 4.3 :Chip Transistor 0.022 $\rightarrow$ R022 Q451, 452 Q501 Q502, 506, 654, 801, 803, 701-706, 751, 752, 851 ANT & SDK P.C.BOARD Q503, 653, 655, 709 GND FM/AM TUNER UNIT Q504 SK DK DECODER Q505 19 26 21 Q651, 760, 853, 857 Q707, 854, 855, 856 Q710 Q753-756, 759, 802 Q757, 758 Q8Ø5 Q810, 811 Q851, 852 DK INTERRUPT B No. 1 2 3 4 (V) 4.7 4.7 4.7 FLAT AMP BUFFER 3 CS18 R525 √ 82× R526 4 X 4 X AM/FM+B SWITCH □ C801 TA8214K \$ 3 \$ (F) **\$\$\$\$\$\$** PD4213 36 37 801 802 CPU VCO AMP 38 39 40 TLLUMINATION SOLOR SELECT SWITCH LCD IL804:CEL1013 IL805. 806 CEL-147 0506 D. [LM S913 LOOP FILTER MOTHER P.C.BOARD F BOAF LCD P.C.BOARD

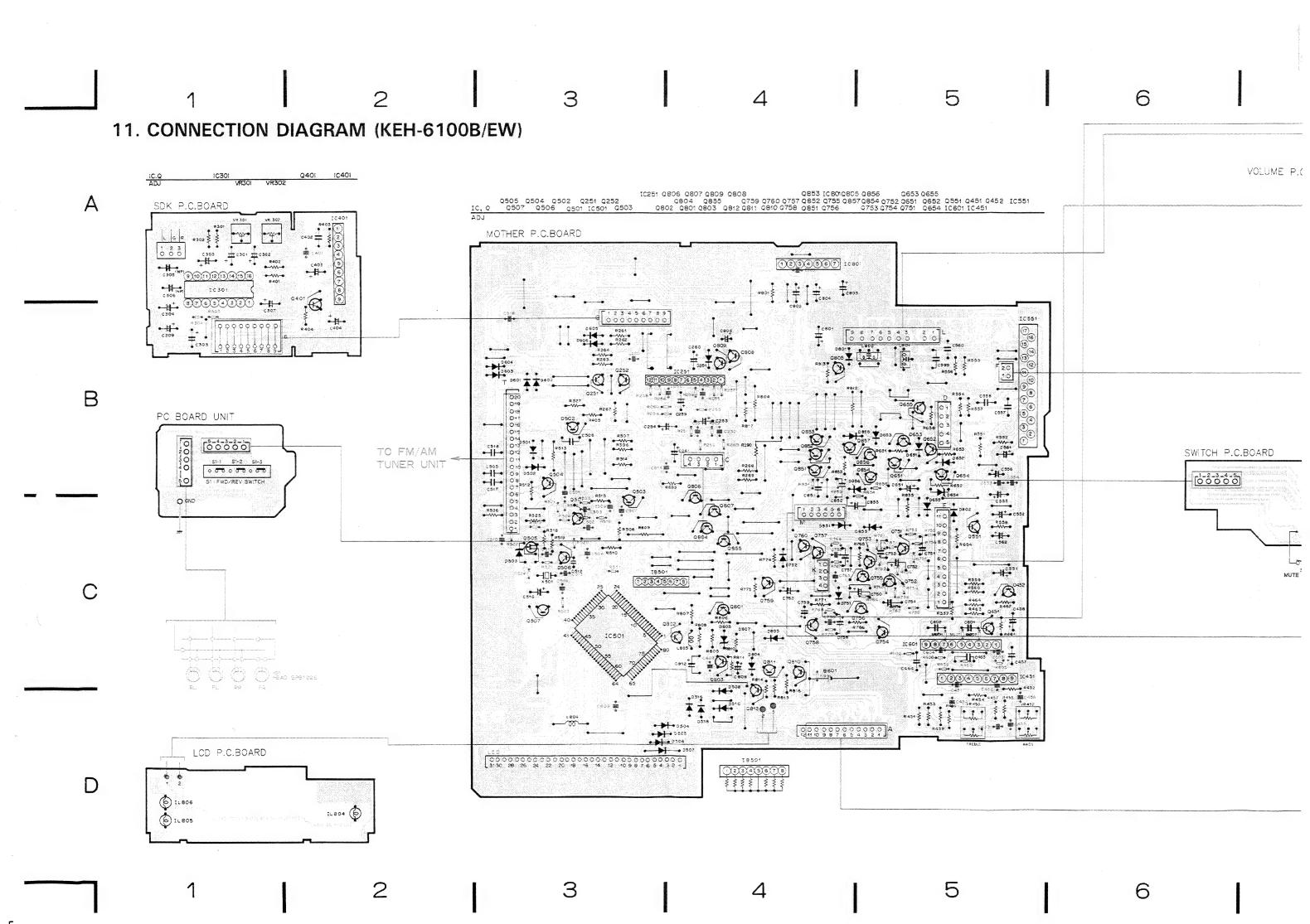
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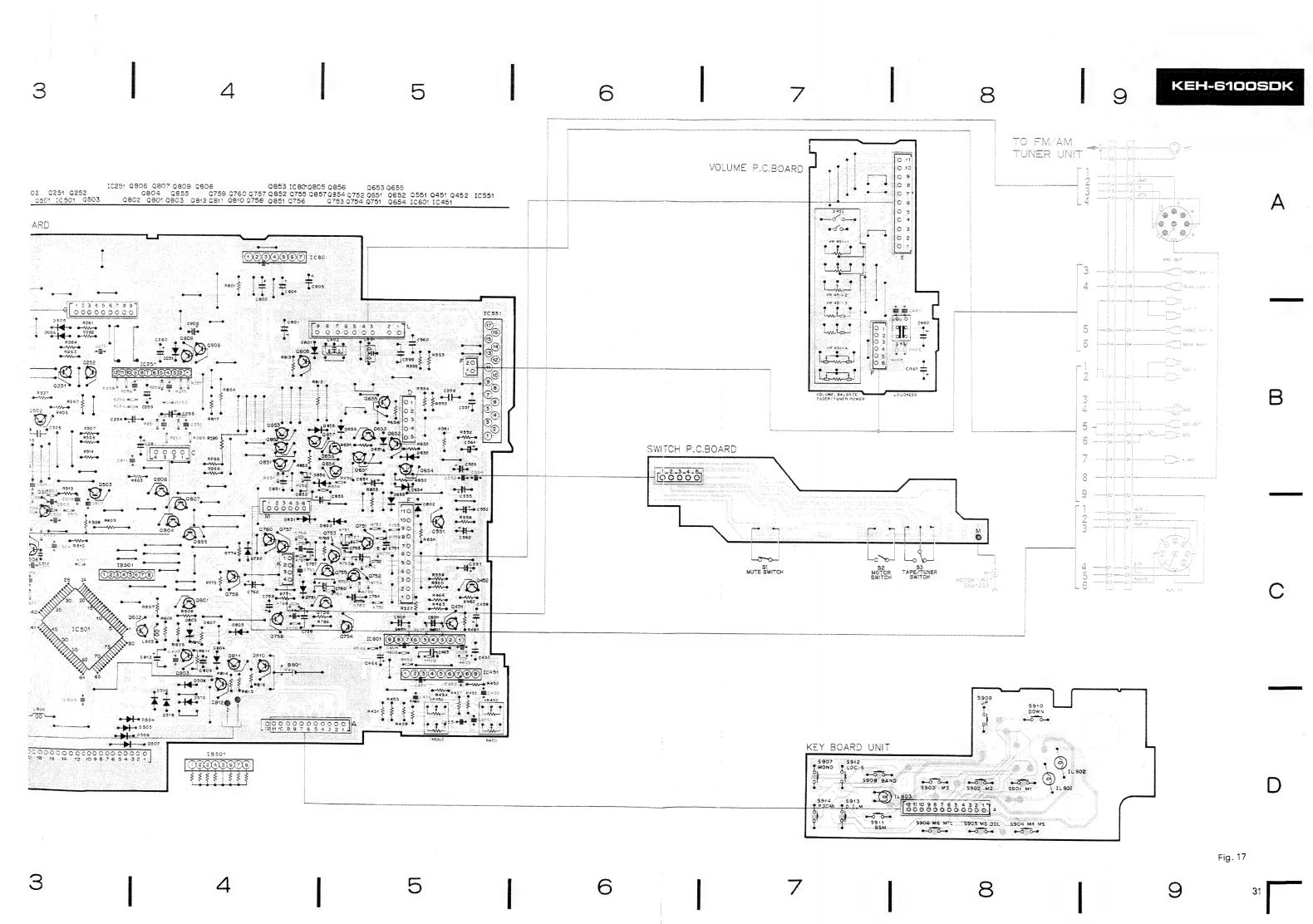
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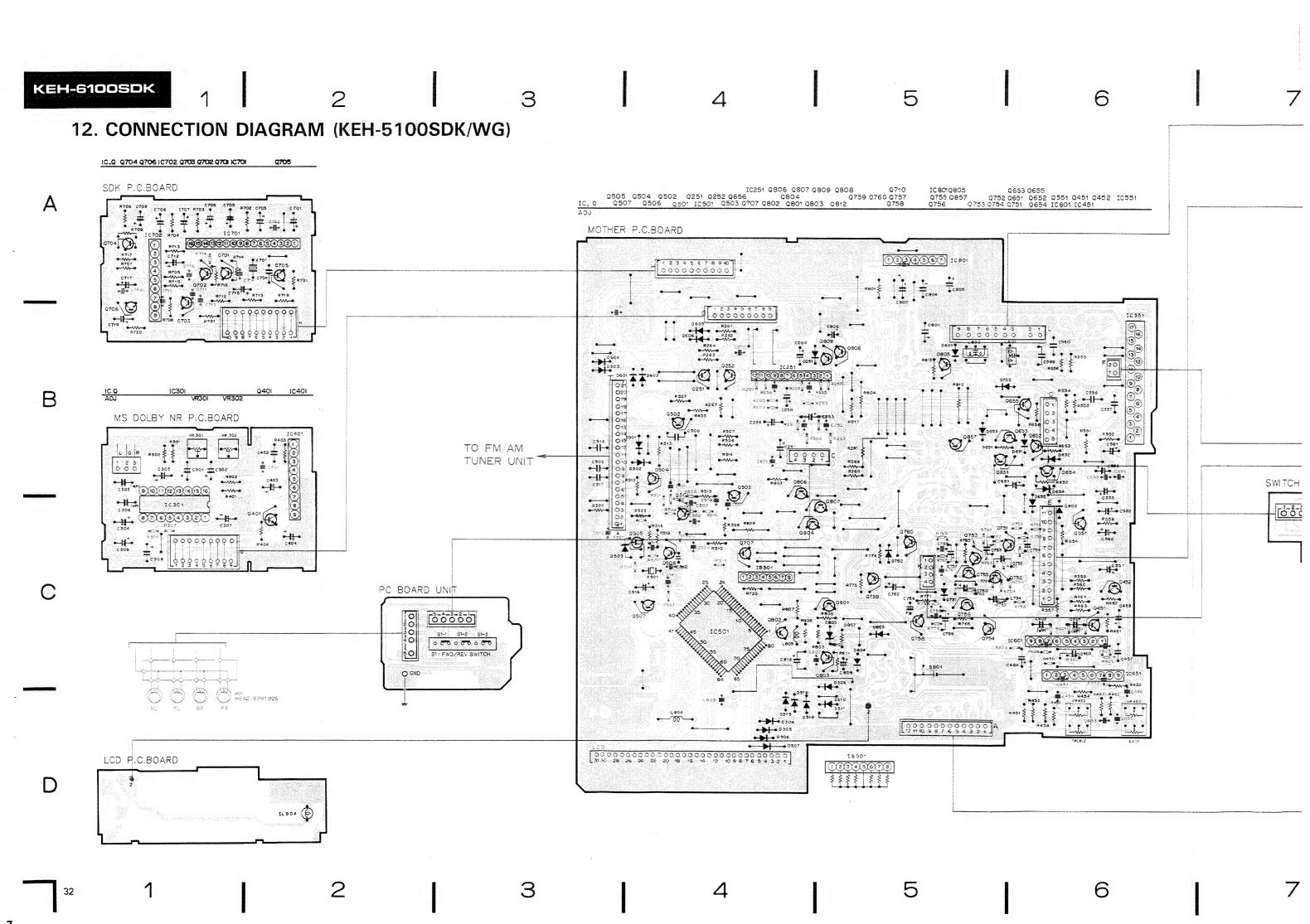


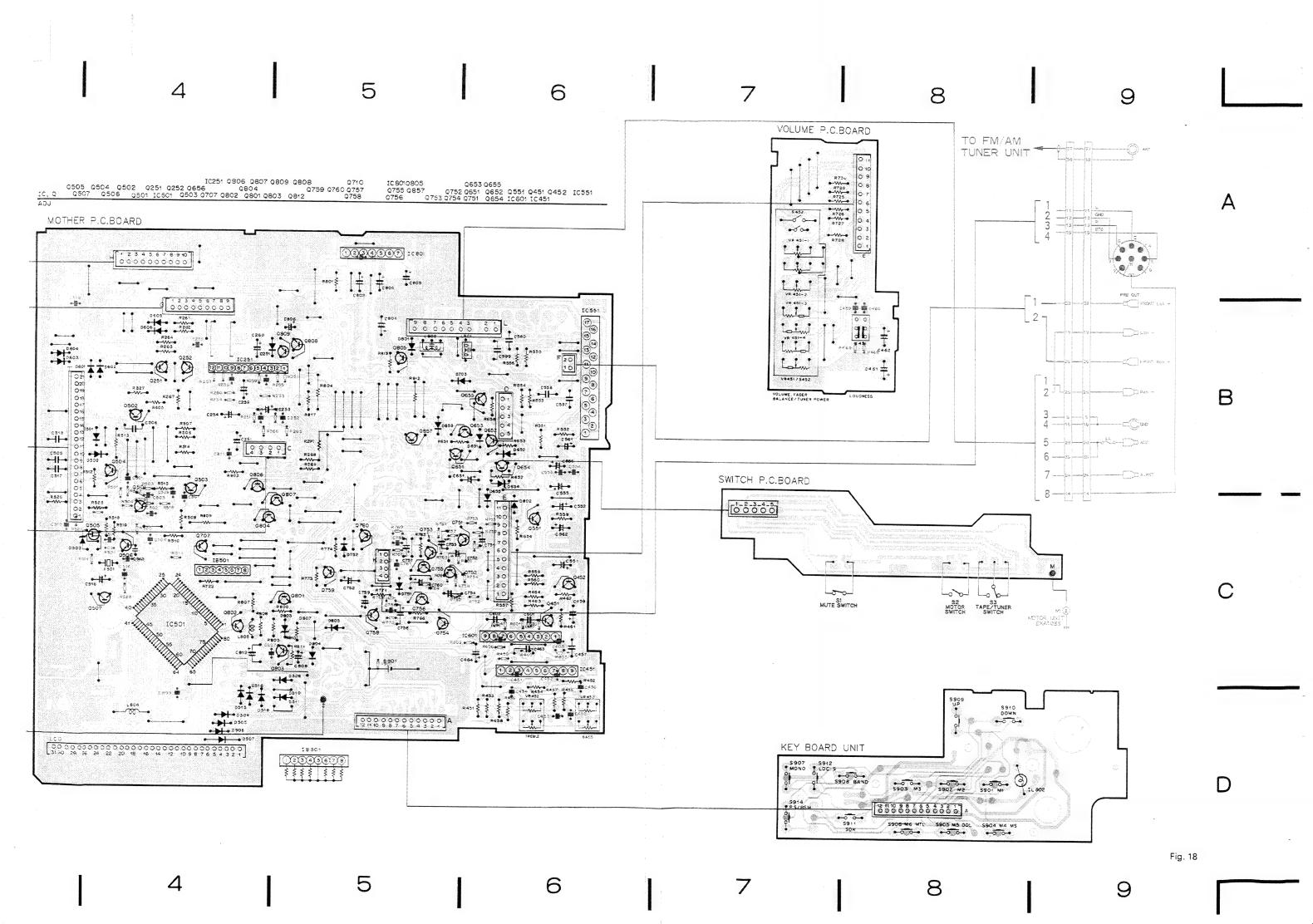


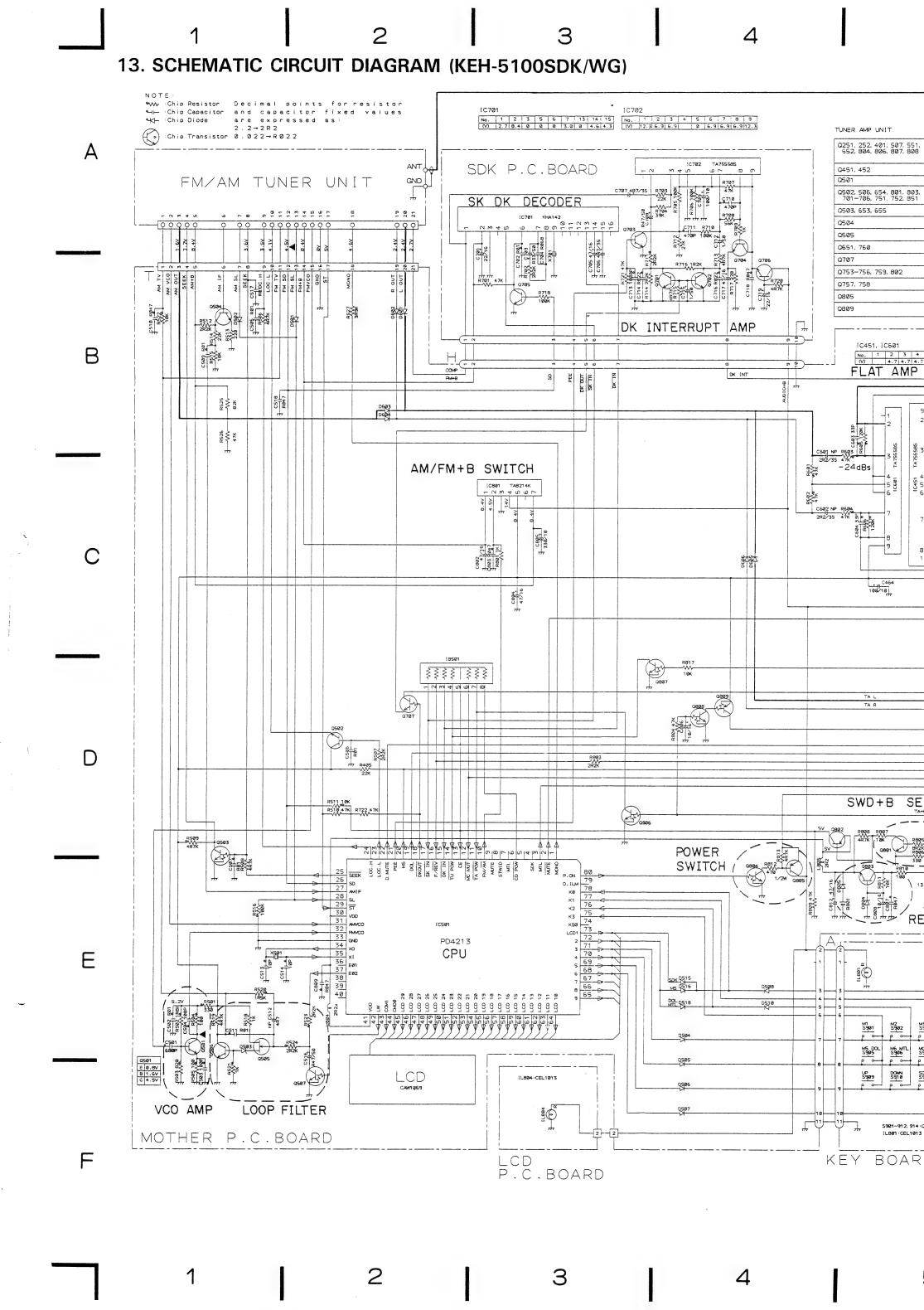


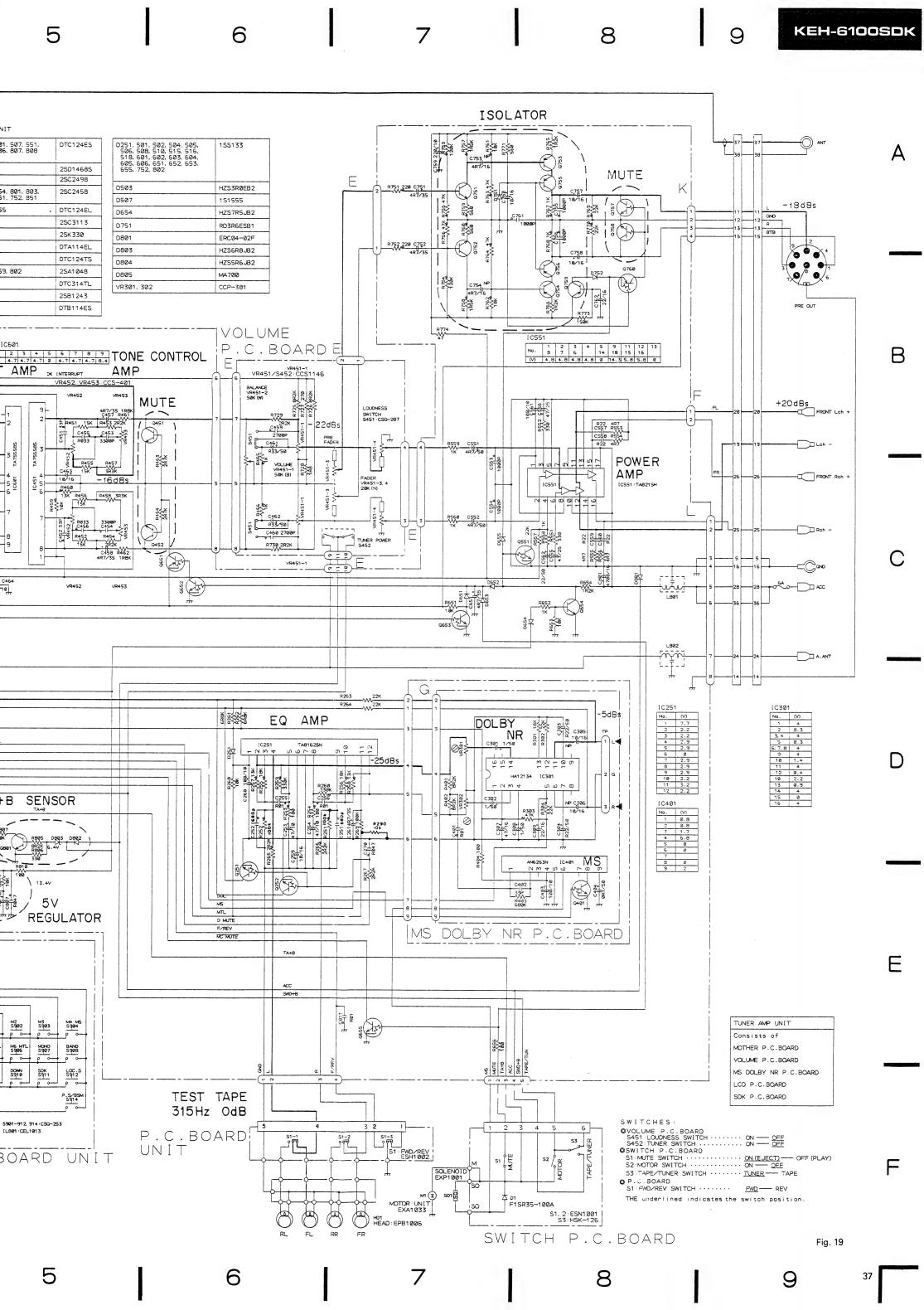


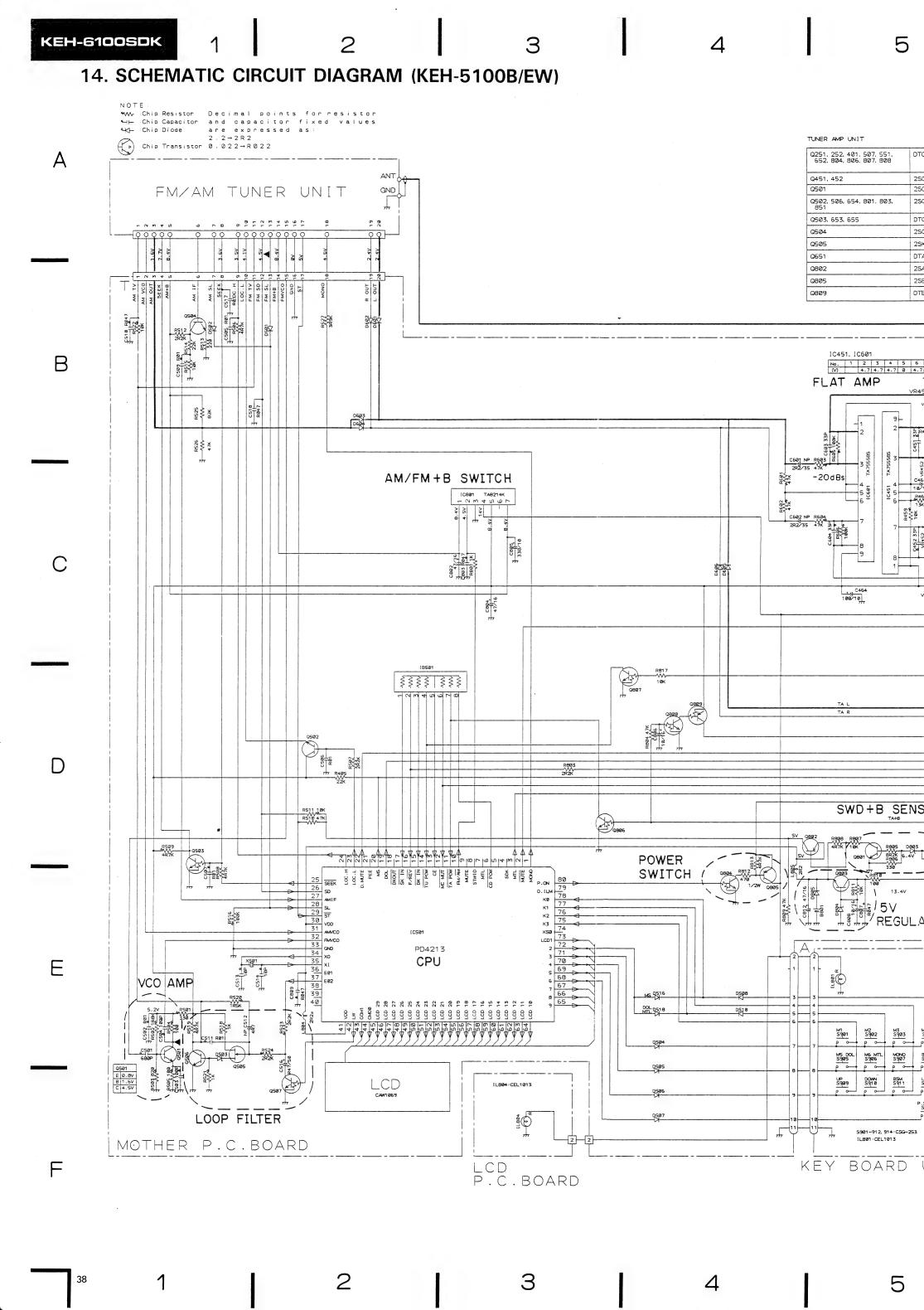


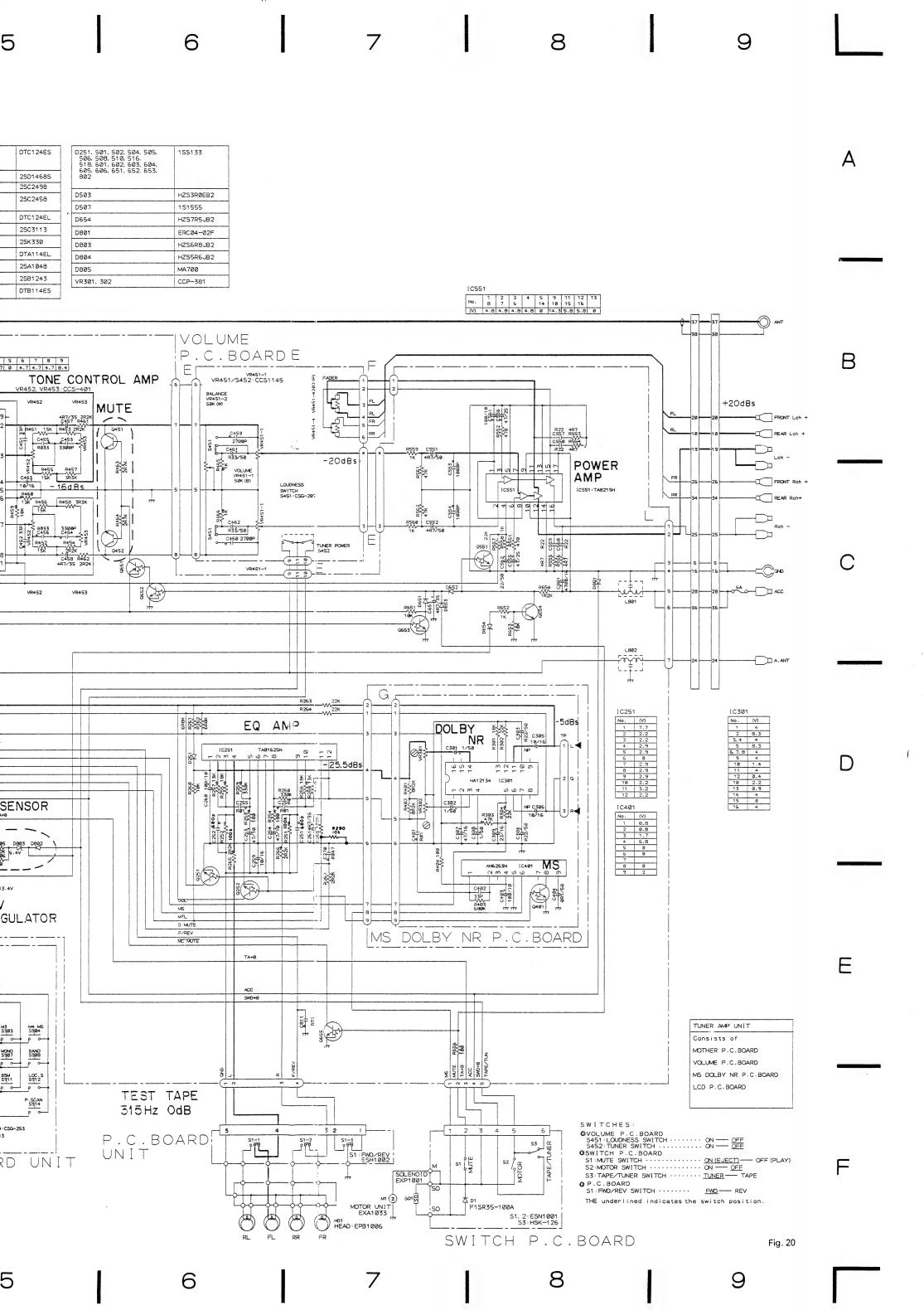


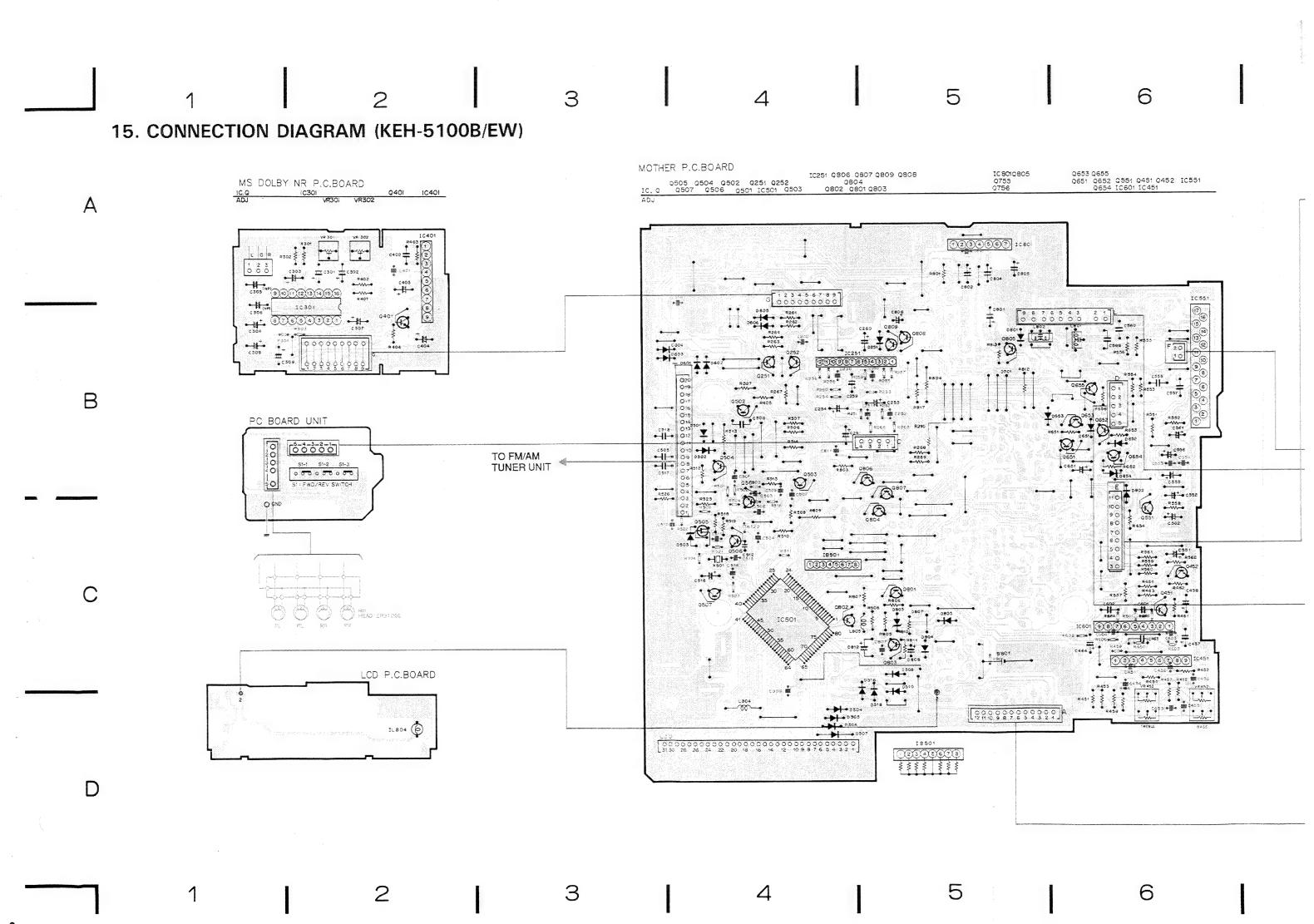


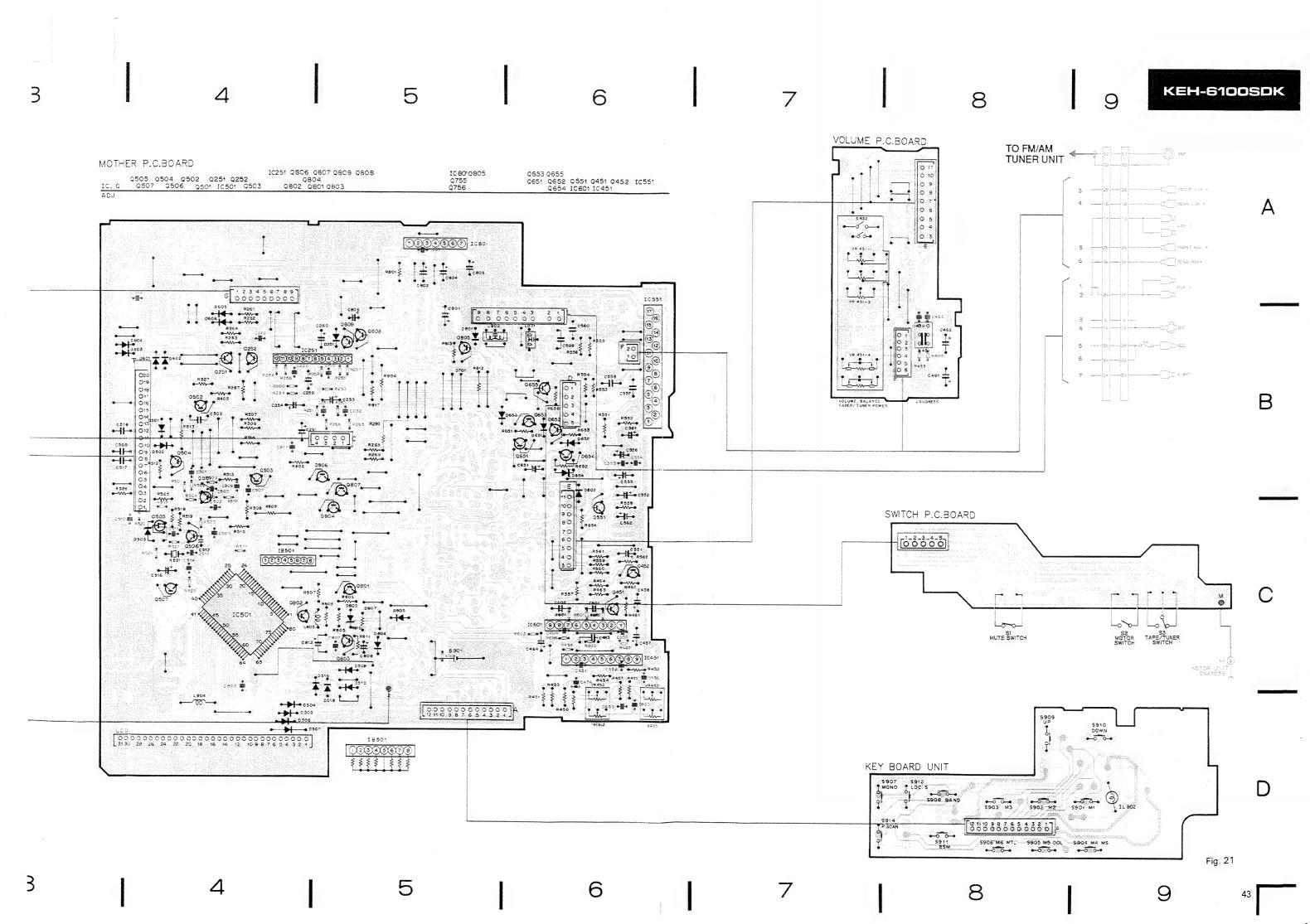


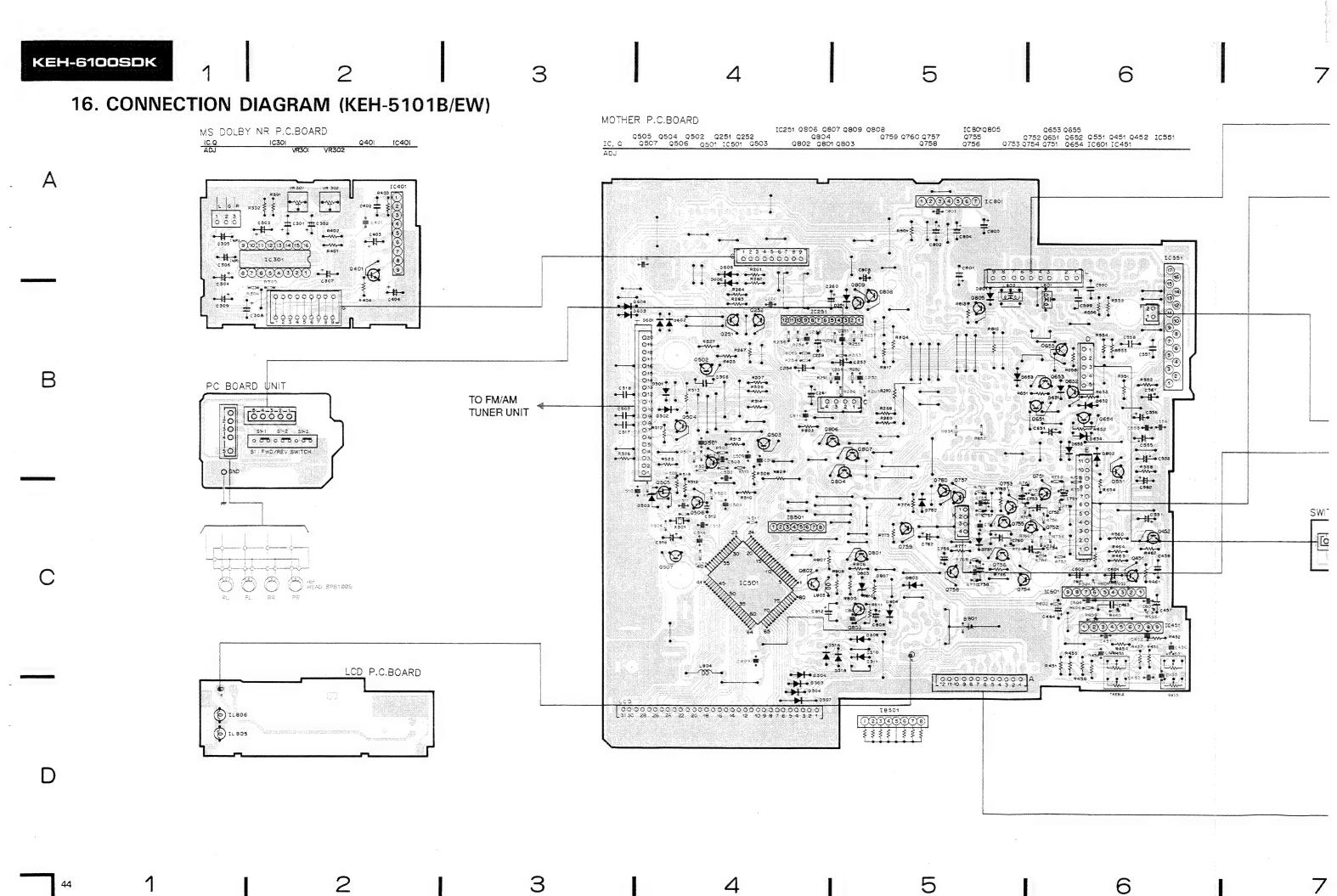


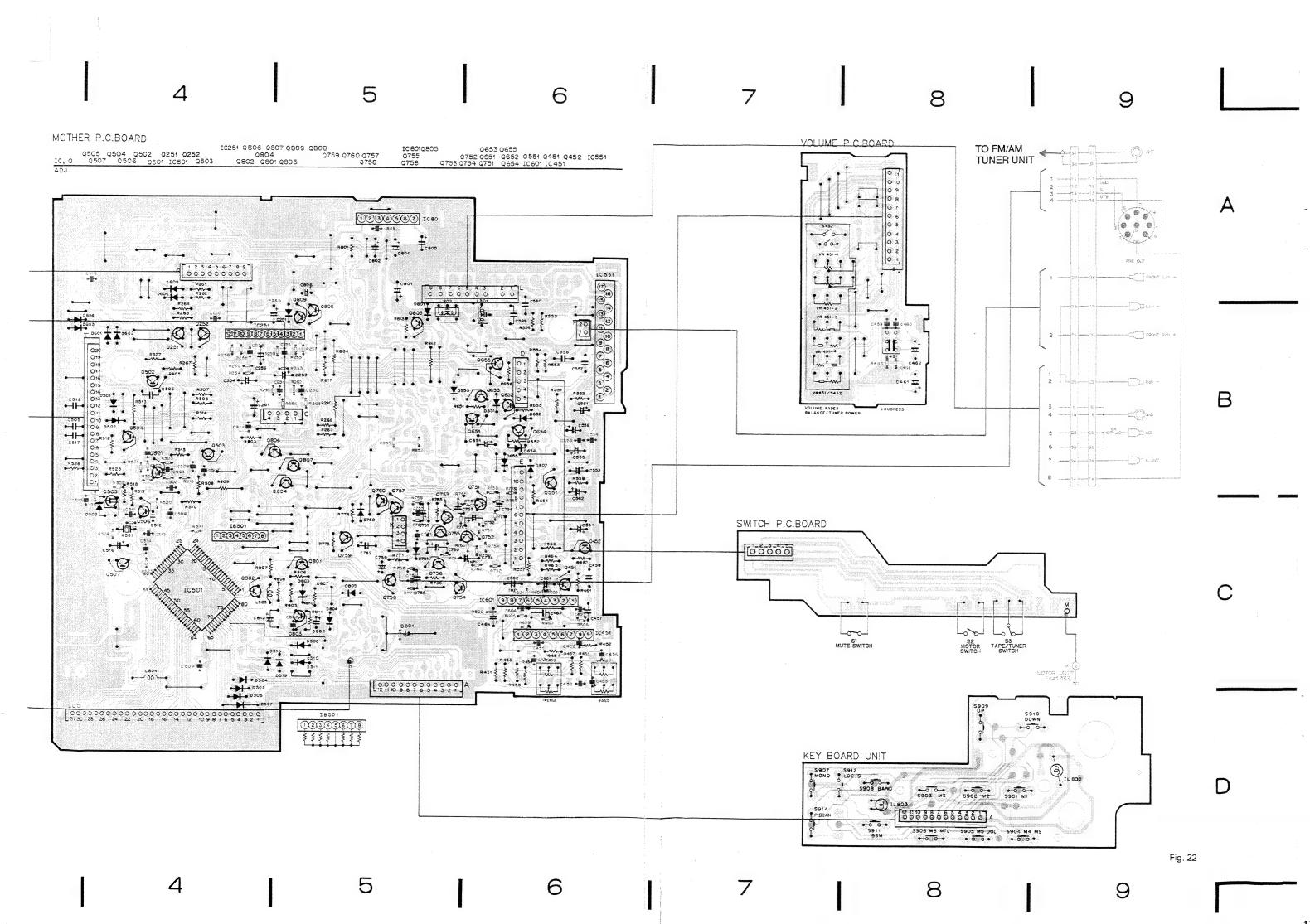


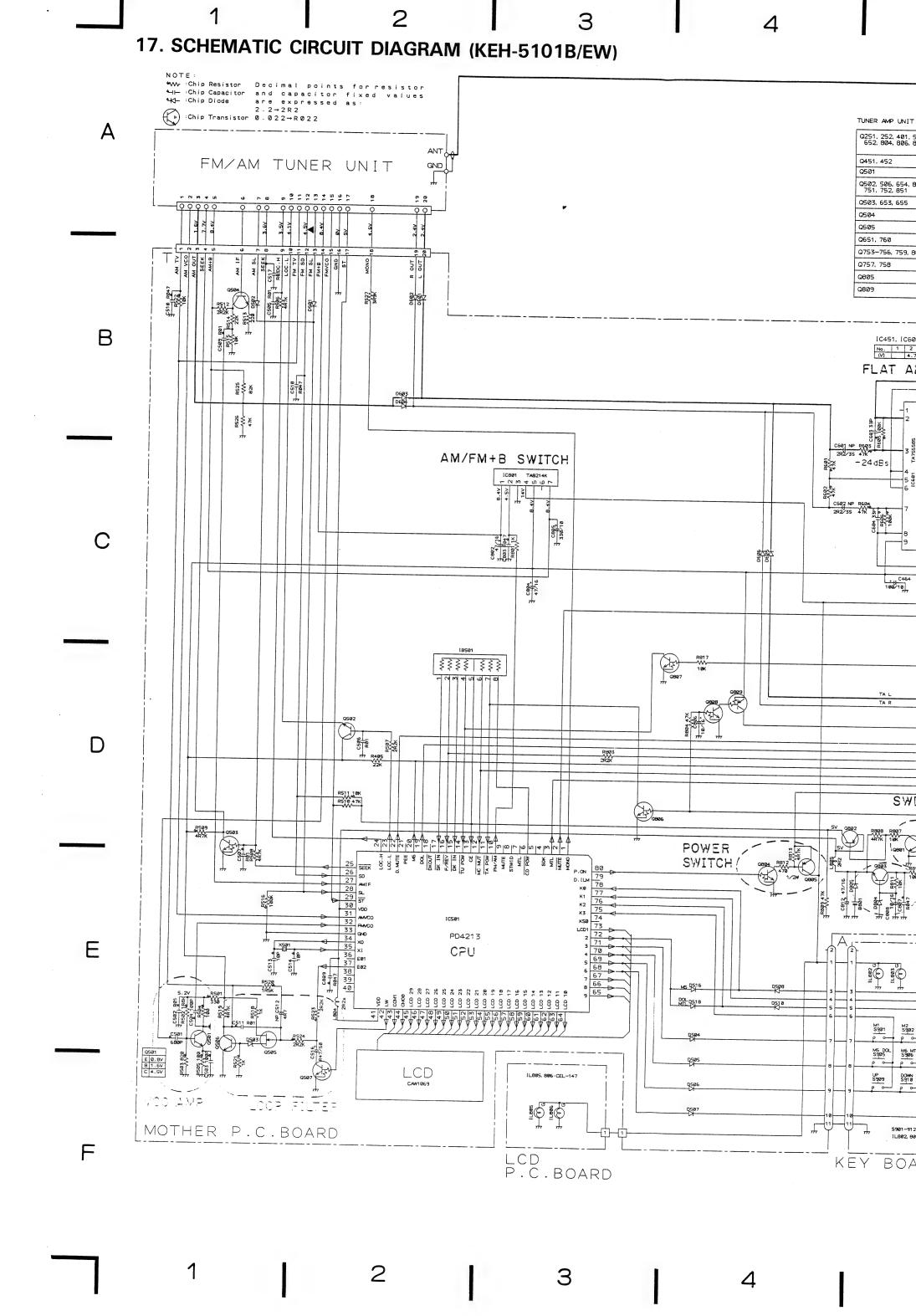


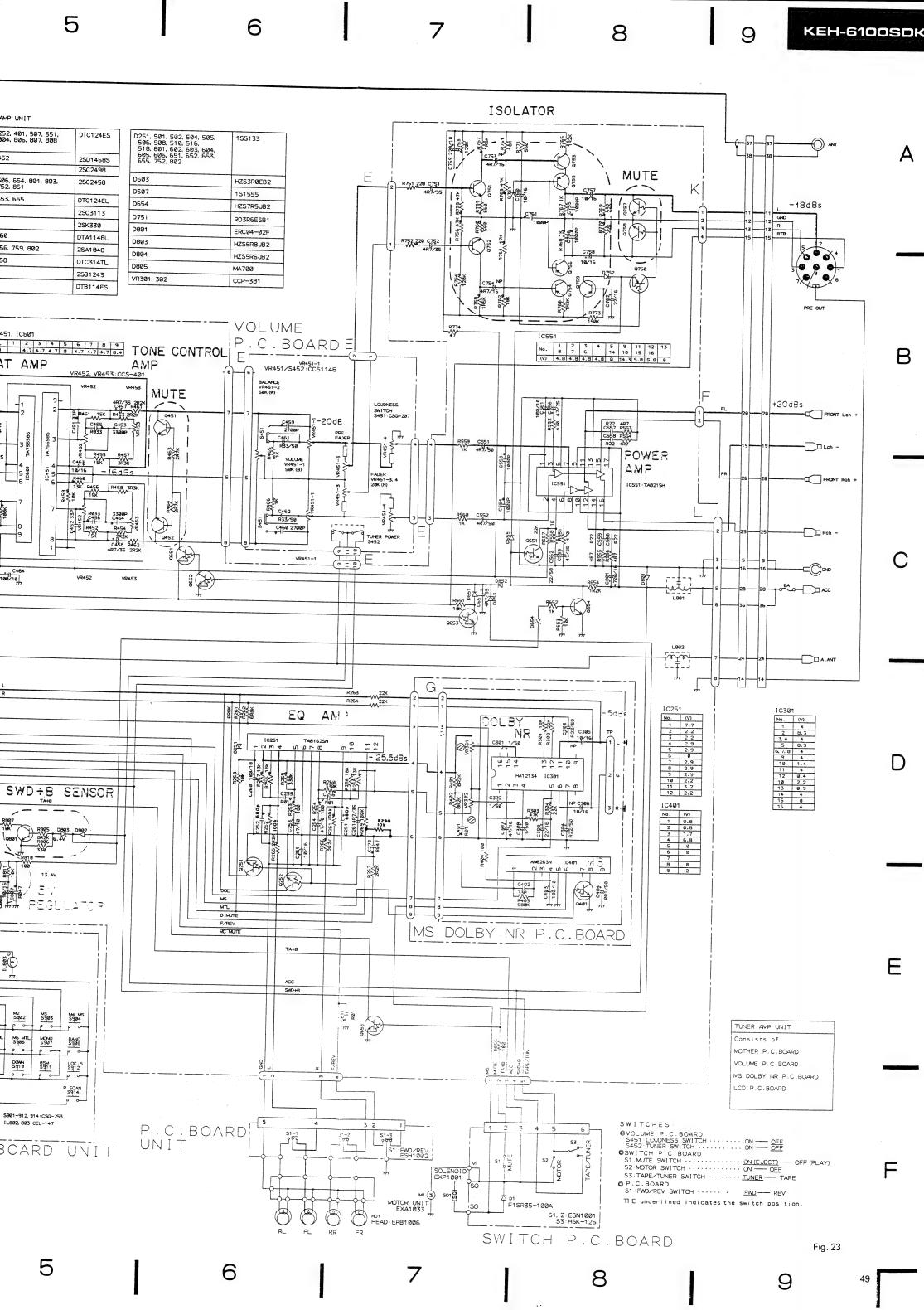








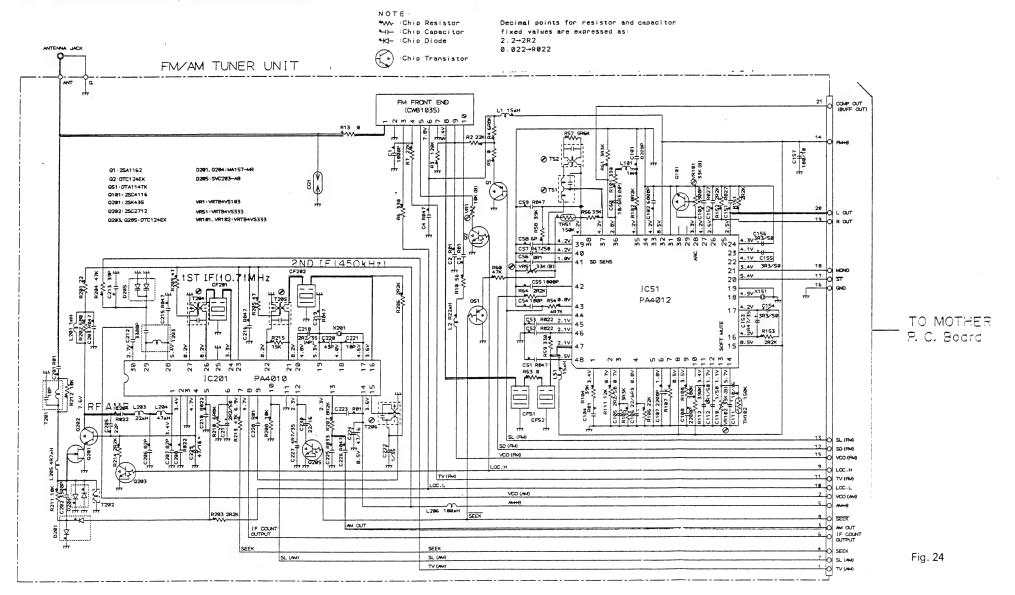


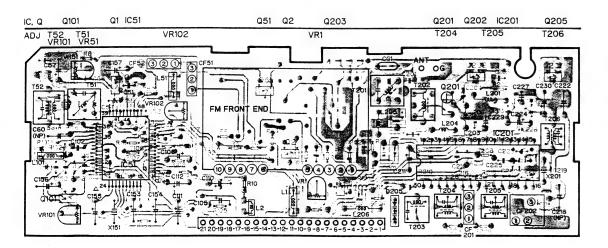


# KEH-6100SDK

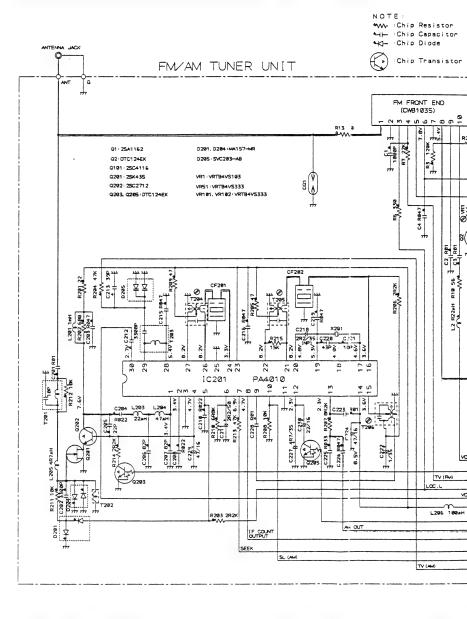
## 18. CIRCUIT DIAGRAM AND P.C. BOARDS PATTERN

#### 18.1 KEH-6100SDK/WG, KEH-5100SDK/WG





### 18.2 KEH-6100B/EW, KEH-5100B/EW, KEH-51013/EW



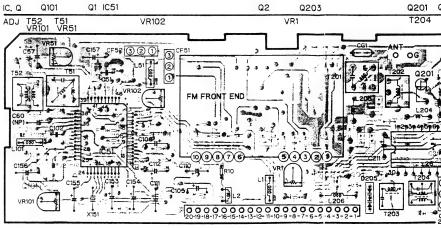


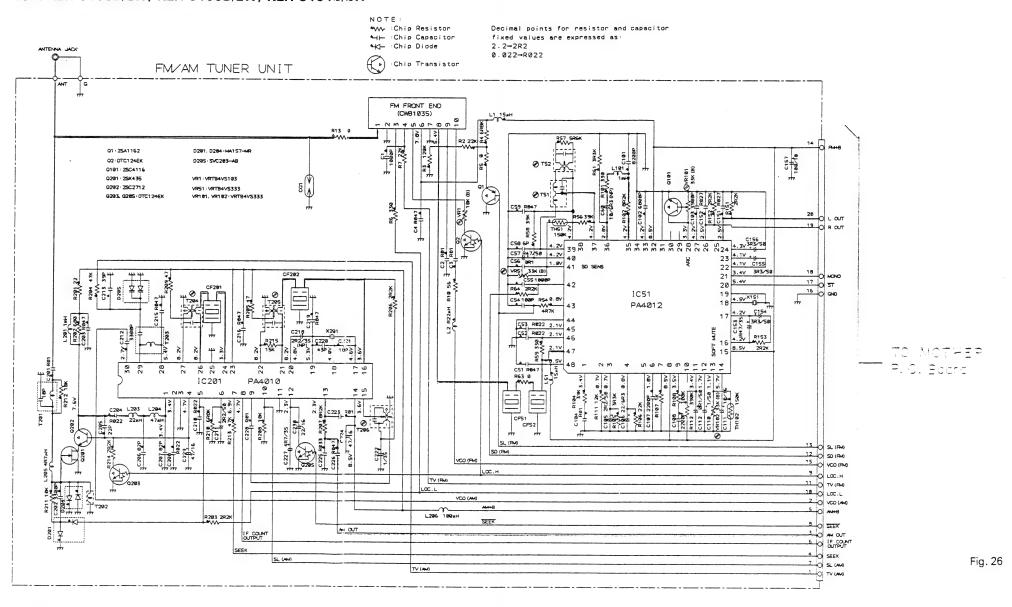
Fig. 25

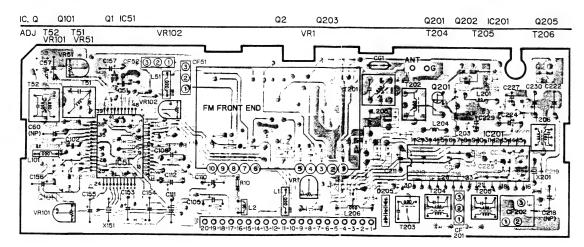
## RN

or resistor and capacitor

# expressed as: 1007 4.1V .155 22 3.4V 3R3/5 20 5.4V 40 41 SD SENS 17 O ST 16 O GNO JC51 PA4012 17 4.2V 5154 17 4.2V 5154 51 50 5154 51 TO MOTHER P. C. Board 48 ← 9 O LOC.H 11 O TV (PM) -2 0 vco (440 B O SEEK SEEK 7 O SL (AM) Fig. 24

#### 18-2 KEH-6100B/EW, KEH-5100B/EW, KEH-51013/EW

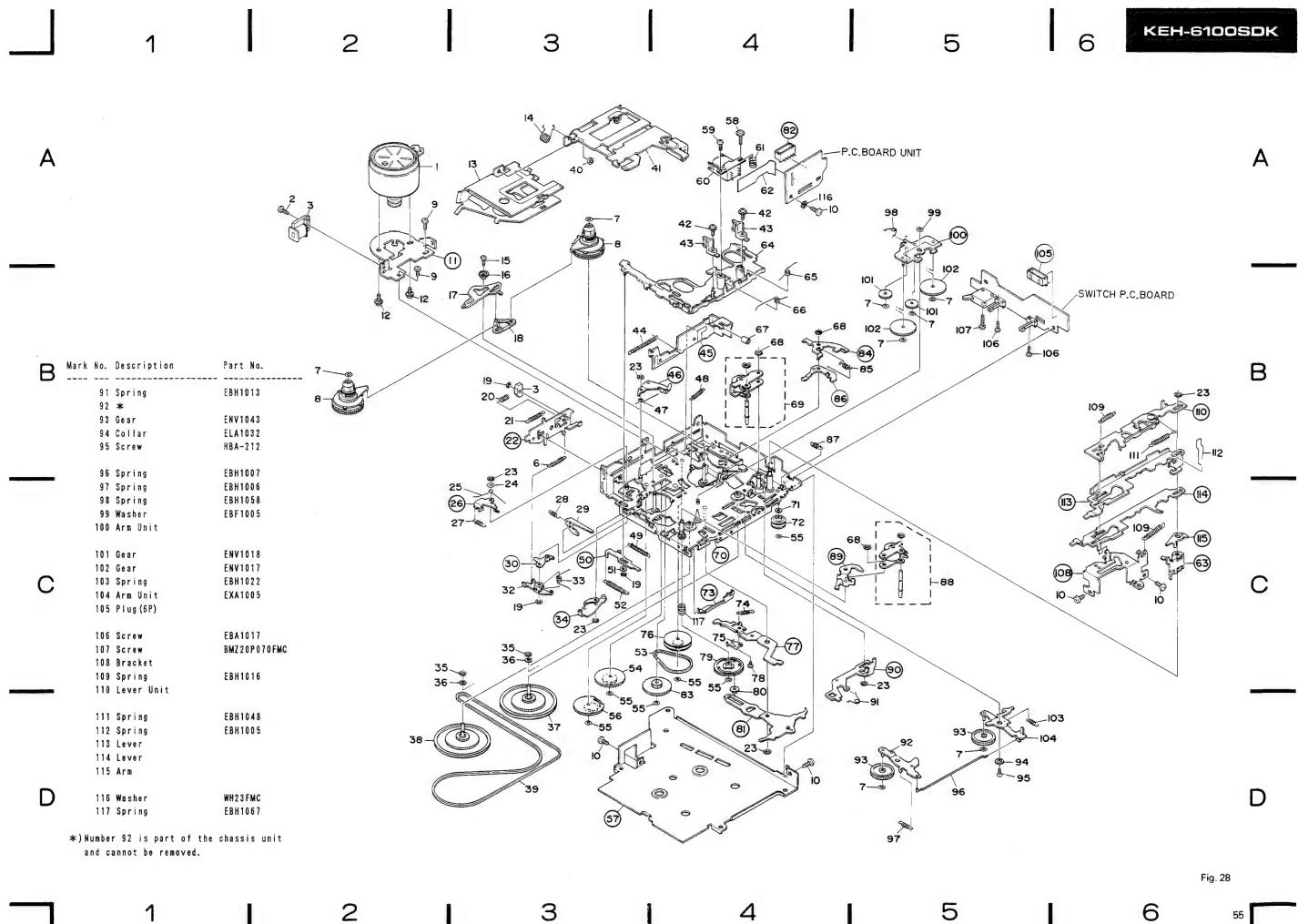


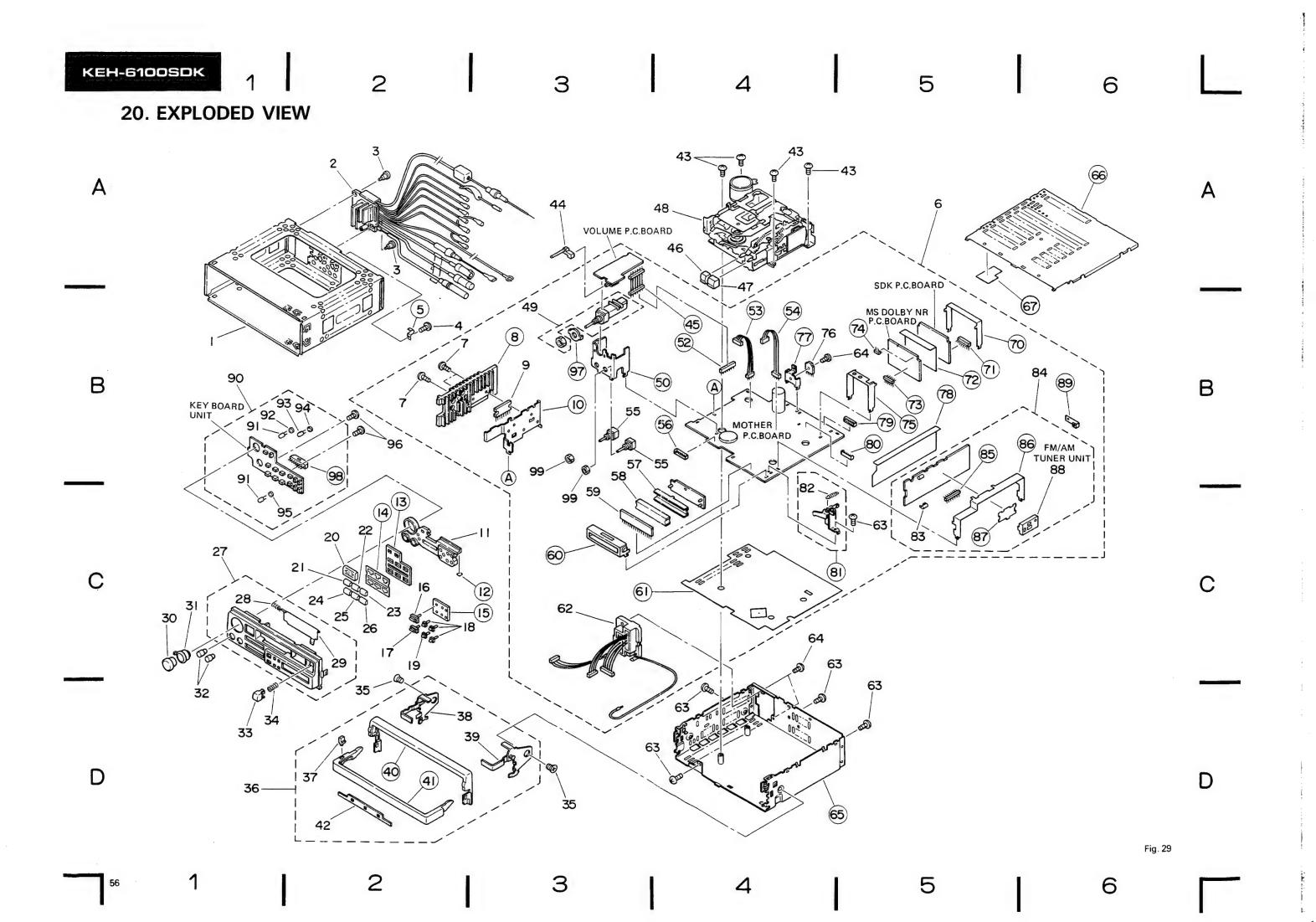


# 19. CASSETTE MECHANISM ASSY EXPLODED VIEW

• Parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Motor Unit	EXA1033	46	Arm	
2	Screw	EBA1008	47	Spring	EBH1040
3	Solenoid	EXP1001	48	Spring	EBH1041
4			49	Spring	EBH1021
5	•••••		50	Lever	
6	Spring <sub>&gt;</sub>	EBH1056	51	Washer	EBE1001
7	Washer	CBF-166	52	Spring	EBH1009
8	Ree! Unit	EXA1032	53	Belt	ENT1009
9	Screw	BMZ23P030FMC	54	Gear	ENV1034
10	Screw	BSZ23P040FMC	55	Washer	CBF-135
11	Bracket		56	Gear	ENV1050
12	Screw	PMS26P025FUC	57	Cover	
13	Cassette Holder	ENC1013	58	Screw	EBA1013
14	Spring	EBH1019	59	Screw	BMZ20P050FMC
15	Screw	EBA1009	60	Head	EPB1006
16	Collar	ELA1042	61	Spring	EBH1065
17	Arm	ENV1032	62	P. C. Board	ENP1012
18	Arm	ENV1045	63	Arm	
19	Washer	YE12FUC	6 4	Head Base Unit	EXA1036
20	Spring	EBH1038		Spring	EBH1004
21	Spring	EBH1012	66	Spring	EBH1003
22	Lever Unit		67	Cushion	CNV1667
23	Washer	YE15FUC	6.8	Washer	YE20FUC
2 4	Washer	CBF-165	6 9	Pinch Roller Unit	EXA1034
2 5	Spring	EBH1049	70	Chassis Unit	
26	Arm		71	Washer	EBF1004
27	Spring	EBH1060	72	Pulley	ENV1009
28	Spring	EBH1066	73	Lever	
29	Arm	ENC1046	7.4	Spring	EBH1025
30	Arm		75	Spring	EBL1001
3 1	••••		76	Pulley	ENV1010
3 2	Arm	ENC1057	77	Arm	
3 3	Spring	EBH1008	7.8	Screw	HBA-147
3 4	Arm Unit		79	Gear	ENV1035
3 5	Washer	CBG1001	80	Collar	ELA1018
36	Washer	HBF-179	81	Arm	
37	Flywheel (N)	ENV1029	8.2	Plug (5P)	
38	Flywheel(R)	ENV1030	83	Gear	ENV1011
39	Belt	ENT1003	8.4	Arm	
40	Roller	ELA1051	8 5	Spring	EBH1024
41	Frame Unit	EXA1025	86	Ratchet	
42	Screw	PMS20P040FMC	87	Spring	EBH1018
43	Tape Guide	ENV1016	8.8	Pinch Roller Unit	EXA1035
	l Spring	EBH1020		Arm	
45	i Lever		9 (	Lever	





## Parts List

#### NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- Parts marked by "

  " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

rk No.	Description	Part No.	Mark	No.	Description	Part No.
1	Вох	CNB1289	*	46	Knob (<<)	CAC2159
2	Cord Assy	CDE2241	*	47	Knob (>>)	CAC2161
3	Screw	CBA1073	•	48	Cassette Mechamism Assy	EXK1071
4	Screw	BMZ30P040FMC		49	Volume	CCS1144
5	Clamper			50	Holder	
6	i Tuner Amp Unit	CWM2 0 8 7		51	••••	
7	Screw	BMZ30P120FMC		52	Plug	
8	Heat Sink			53	Connector	
9	1 C	TA8215H		54	Connector	
10	Holder			55	Volume	CCS-401
11	Lens	CNV2252		56	Connector	
12	Spacer			57	Housing	CNV2260
13	Cushion			58	Lens	CNV2254
14	Spacer			59	LCD	CAW1069
15	Cushion			60	Holder	
18	Button (BAND)	CAC2157		61	Insulator	
17	Button (SDK. BSM)	CAC2154		62	Cord Assy	CDE2508
18	Button	CAC2155		63	Screw	BMZ30P050FM
19	Button	CAC2155		64	Screw	BMZ30P060FM
20	Button	CAC2153		65	Chassis Unit	
-				66	Case	
2 1	Button (1)	CAC2147		67	Insulator	
	Button (2)	CAC2148		68	• • • •	
	Button (3)	CAC2149		69	• • • • •	
	Button (4)	CAC2150		70	Holder	
	Button (5)	CAC2151				
		0.002.101		71	Connector	
26	Button (6)	CAC2152		72	Insulator	
	Grille Unit	CXA3140		73	Connector	
	Spring	CBH1210		74	Piug	
	Door	CAT1227		75	Holder	
	Knob (VOLUME)	CAA1200				
	KNOD (VOCOME)	CAR 1200		76	IC	TA8214K
21	Knob (FADER)	C141201		77	Holder	
		CAA1201		78	Insulator	
	Knob (BASS, TREBLE)	CAA1202		79	Plug	
	Knob (<>)	CAC2163		80	Piug	
	Spring	CBH1187				
35	Screw	CMZ50P080FMC		8 1	Lever Unit	
A 25	Autab Batana Handt A	AV . A . A . A			Spring	CBH1191
	Quick Release Handle Assy	CXA3186			Anttena Jack	CKX1010
	Button	CAC2165	•	84	FM/AM Tuner Unit	CWE1186
	Handle Unit	CXA3214		85	Plug	
	Handle Unit	CXA3215			_ IW	
40	Panel				Holder	
A 1	Cover				Insulator	
	Handle	CNC3016			FM Front End	CWB 1035
	Screw	BMZ26P050FMC			Holder	
	Button		•	90	Key Board Unit	CWM2 190
44	Plug	CAC2156				



Mark	No.	Description	Part No.
	91	Lamp	CEL-147
		Bush	CNV-724
	93	Lamp	CEL1013
	9 4	Bush	CNV-724
	9 5	Bush	CNW-855
	9 6	Screw	BPZ20P060FMC
	97	Spacer	
	98	Connector	
	<b>9</b> 9	Nut	CBA-066

## • KEH-6100B/EW. KEH-5100SDK/WG. KEH-5100B/EW. KEH-5101B/EW

Mark	No.	Description	KEH-6100SDK/WG Part No.	KEH-6100B/EW Part No.	KEH-5100SDK/WG Part No.	KEH-5100B/EW Part No.	KEH-5101B/EW Part No.
	2	Cord Assy	CDE2241	CDE2242	CDE2507	CDE2506	CDE2507
•	6	Tuner Amp Unit	CWM2087	CWM2088	CWM2092	CWM2093	CWM2095
	19	Button	CAC2155	CAC2155			
	27	Grille Unit	CXA3140	CXA3139	CXA3146	CXA3144	CXA3145
	29	Door	CAT1227	CAT1227	CAT1227	CAT1227	CAT1228
	45	Plug	(11P)	(11P)	(11P)	(9P)	(11P)
	52	Plug	(11P)	(11P)	(11P)	(9P)	(11P)
	62	Cord Assy	CDE2508	CDE2508	CDE2511	CDE2510	CDE2511
	65	Chassis Unit					
	70	Holder		••••		• • • • •	
	71	Connector		••••		• • • • •	
	72	Insulator		••••			
	79	Plug		••••		• • • • •	
•	84	FM/AM Tuner Unit	CWE1166	CWE 1167	CWE1166	CWE 1167	CWE1167
	85	Plug	(21P)	(20P)	(21P)	(20P)	(20P)
•	90	Key Board Unit	CWM2190	CWM2190	CWM2191	CWM2 1 9 1	CWM2067
	91	Lamp	CEL-147	CEL-147			CEL-147
	92	Bush	CNV-724	CNV-724	• • • • •		CNV-724
	93	Lamp	CEL 10 13	CEL1013	CEL1013	CEL 1013	
	94	Bush	CNV-724	CNV-724	CNV-724	CNV-724	
	95	Bush	CNW-855	CNW-855		• • • • •	CNW-855



# 21. PACKING METHOD

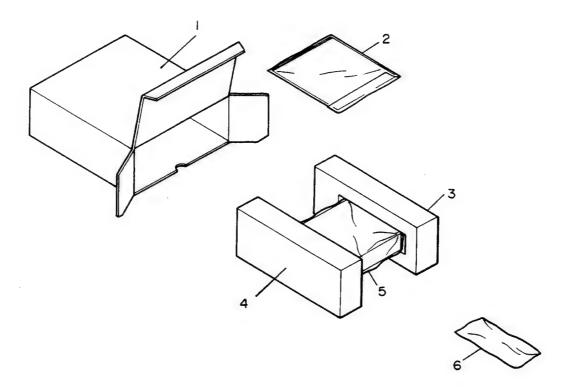


Fig. 30

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Carton (KEH-6100SDK/WG)	CHG1691	3	Styrofoam	CHP1258
	Carton (KEH-6100B/EW)	CHG1687	4	Styrofoam	CHP1257
	Carton (KEH-5100SDK/WG)	CHG1692		Cover	CEG-236
	Carton (KEH-5100B/EW)	CHG1688	6	Accessory Assy	CEA1471
	Carton (KEH-5101B/EW)	CHG1689		Screw(×1)	CBA-102
2	Owner's Manual (WG)	CRD1322	6-2	Screw(×1)	CBA1002
	(German, French)			Strap	CNF-111
	Owner's Manual (EW)	CRD1321		Bush	CNV1009
	(English, French, German, Spanist			Nut (×2)	NF50FMC
	Swedish, Norwegian, Dutch, Finni			(1.2)	AT OVE MO
	Installation Manual	CRD1323			
	(KEH-6100SDK/WG, KEH-6100B/EW)				
	Installation Manual	CRD1324			
	(KEH-5100SDK/WG, KEH-5100B/EW.	***************************************			
	KEH-5101B/EW)				

## 22. ELECTRICAL PARTS LIST

#### NOTE:

 For your parts Stock Control, the fast moving items are indicated with the marks \*\* and \*.

## : GENERALLY MOVES FASTER THAN \*.

This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components. Chip Resistor

RS1/8S DDJ, RS1/10S DDJ Chip Capacitor (except for CQS.....) CKS....., CCS...., CSZS.....

Unit Number:

Unit Name : FM/AM Tuner Unit (KEH-6100SDK/WG)

MISCELLANEOUS	RESISTORS

		-			MESIS	IIVI	J			
===		== Circu	it Symbol & No. ==== Part Name		Mark			===	Circuit Symbol & No. ==== Part Name	Part No.
	51			PA4012		R	2	1	106	R\$1/10\$223
	201			PA4010		R	3			RS1/10S124
Q	1		Chip Transistor	2SA1162		R	4			RS1/10S682
Q	2		Chip Transistor	DTC124EK		R	5	13	63	RS1/10S0R0
Q	51		Chip Transistor	DTA114TK		R	6	5 9	101	R\$1/10\$331
Q	101		Chip Transistor	2SC4116		R	10			R\$1/10\$560
Q	201			25K435		R	54			RS1/10S472
Q	202		Chip Transistor	2SC2712		R	56	58	104	RS1/10S393
Q	203	205	Chip Transistor	DTC124EK		R	57			RS1/10S562
D	201	204	Chip Diode	MA157-MR		R	60			R\$1/10\$473
D	205		Variable Capacitance Diode	SVC203-AB		R	61	105		R\$1/10\$332
L	1	51	inductor	CTF1104		R	54			R\$1/10\$222
L	2		Inductor	CTF1086		R	102			RS1/10S822
L	101		Inductor	CTF1126		R	107			RS1/10S102
L	201		inductor	CTF1084		R	108			R\$1/10\$104
	203		Ferri-Inductor	LAU220K		R	111			RS1/10S123
	204		Ferri-Inductor	LAU470K		R	112			RS1/10S394
_	205		Ferri-Inductor	LAU4R7K		R	151	152	153	RS1/10S222
	206		Ferri-Inductor	CTF-157		R :	201			R\$1/10\$220
T	51		Coil	CTE1021		R	202			R\$1/105681
T	52		Coil	CTE1022		R :	203	206	214	R\$1/10\$222
	201		Coil	CTB1020		R :	204	213		RS1/10S473
	202		Coil	CT81004		R :	205	209		RS1/10S470
	203		Coil	CTB1040		R :	207			RS1/10S822
T	204		Coil	CTE1037		R :	208	211	212	RS1/10S103
Ţ	205		Coil	CTE1038		R :	210			RS1/10S682
Ţ	205		Coil	CTE1039		R :	215			RS1/10S153
CG	1			DSP-201M						,
TH	51	102	Thermister	DTN-T2040154K	CAPAC	110	RS			
CF	51	5 2	Ceramic Filter	CTF-182						
CF	201		Ceramic Filter	CTF1041	Mark				Circuit Symbol & No. ==== Part Name	
				(CTF1027)		С	1			
CF	202		Filter	CTF1085		C		3	104	CKSQYB102K
				(CTF-100)		C		59		CKSQYB103K
Х	151		Ceramic Resonator	CSS1055		C	51	3 3		CKSQYF473Z
				(CSS1053)		C		53		CKSQYF473Z: CKSQYB223K:
X	201		Crystal Resonator	CSS1014		С	54			CC5051 104 11
			•	(CSS1057)		C	55			CCSQSL101J
٧R	1		Semi-fixed 10kΩ(B)	VRTB4VS103		C	55			CKSQYB102K
VR	51	101 102	Semi-fixed 33kΩ(B)	VRTB4VS333		C	57			CKSQYF104Z: CEAR47M50L:
***										

Mark ====== Circuit Symbol & No. ==== Part Nam	e Part No.	Mark	====	====	Circ	uit	Symbol	& No.	2222	Part	Name	Part No.
C 60	CEALNP100M6R3		Q 4	01								DTC124ES
C 101	CKSQYB822K50		0 4	51 452								2SD1468S
C 102	CKSQYB682K50		Q 5	1								2SC2498
C 103	CKSQYB392K50		Q 56	2 506	801	803						2SC2458
C 105	CEA2R2M50LL		Q 50	3 653	655	709						DTC124EL
C 106	CEA220M6R3LL		Q 50	14								2SC3113
C 107 108	CKSQYB222K50		0 50	) 5								25K330
C 110	CEAG10M50LL		Q 50	17								DTC124ES
C 111	CEATOOMIELL		Q 55	1								DTC124ES
C 112	CEAORIMSOLL		Q 65	i 1								DTA114EL
C 151 152	CKSQYB273K25		Q 65	2								DTC124ES
C 153	CSZAR47M35L	4	0 65	4								2SC2458
C 154 155 156	CEASRSM5DLL	1	Q 70	1 702	703	704	705 70	6				2SC2458
C 157	CEATO1M10LS		0 70									DTC124TS
C 201 223 228	CKSQYB103K25	(	0 70	8								DTC124ES
C 202 212	CKSQYB332K50		2 71									2581242
C 203 215 216 219 226	CKSQYF473Z25											2SB1243
C 204 208 210					755	756	750					2SC2458
C 205	CKSQYB223K25 CCSQCH220J50	ì	75	7 758								2 S A 1 0 4 8
C 206 207	CCSQCH820 J50		76									DTC314TL DTA114EL
C 211	CEA2R2M50LL	ſ	2 80	2								
C 213	CCSQCH390J50			4 806	207 5	e n s						2SA1048
C 218	CEA2R2M35NPLL		80									DTC124ES
C 220	CCSQCH430J50		80									2581243
C 221	CCSQCH100D50			0 811								DT8114ES
	0000011100000	·		0 011								2581243
C 222	CSZAOTOK35L	0	81:	2								DTC124ES
C 224	CEA470M16LL	Q	8.5	1 852								2SC3327
C 225	CKSQYB333K25	Q	85	857								DTA114EL
C 227	CEA4R7M35LS	Q	854	4 855	856							DTC124TS
C 229 C 230	CEA470M16LS CEA220M16LL	D	25	I								155133
		n	501	504	505 5	00 0	01 602	689 6	04 005			
		· n	501	802	303 3	00 (	007	903 P	04 505	585		188133
Tuner Amp Unit (KEH=6100SDK/WG)			503									188133
			507									HZS3ROEB2
Consists of				510		• •						151555
• Mother P. C. Board		U	300	310	310 3	10						155133
● Volume P. C. Board		n	£ 1 £	852	0 5 4							
MS Dolby NR P. C. Board				652								155133
• LCD P. C. Board					033							155133
SDK P. C. Board			654									HZS7R5JB2
			655									155133
		U	701									181555
rit Number:		D										ERA15-02
nit Name : Tuner Amp Unit (KEH-6100SDK/WG)			703									ERA15-02VH
7 Nak Auto/kru-010030Y/40)			751									RD3R6ESB1
ISCELLANEOUS			801									ERC04-02F
		D	803								1	HZS6R8JB2
ark ======= Circuit Symbol & No. ==== Part Name	Part No.		804								i	HZS5R6JB2
IC 251	7101000	D	805								1	MA700
IC 301	TA8162SN		851									HZS7R5JB2
IC 401	HA12134	D	853									ERA 15-02VH
IC 451 601	AN6263N	D	855									155133
	TA75558S											
IC 501	PD4213		855	-							1	HZS6R8J82
IC 551		L	801	802								CC61003
	TA8215H	- 1	804				Ferr	i – I ndu	ctor			CTF1042
IC 701	KHA142		805									
IC 701 IC 702	KHA142 TA75558S	L						i – I ndu			ι	LAU2R2M
IC 701	KHA142	L	805								ι	

	504	Countal Bassassas	0001011		0 0				224 (124)
	501	Crystal Resonator	CSS1011		R S				RD1/4PS4
	701 . 804	Ceramic Resonator Lamp 14V 40mA	CSS1019 CEL1013			52 <i>1</i> 551 552			RD1/4PS3
			CEL-147				555 556		RD1/4PS3
	. 805 806 R 301 302		CCP-381		R		555 556		RD1/4PS4 RD1/4PS2
V	301 302	26M1-11X46 22X77 (D)	007-301		η,	,,,			KU1/4732
	R 451/S 452	Volume/Switch	CCS1144			558 559			RD1/4PS1
	8 452 453	Volume	CCS-401				603 604		RS1/10S4
S	451	Switch	CSG-207			05 606			RS1/10S1
		LCD	CAW1069		R 8	51 653			RD1/4PS1 RD1/4PS1
ISTO	ORS			,		, 42			NO 17 41 31
		Cushal & Na Dana Nasa	9 N .		R 8				RD1/4PS1
K ==		Symbol & No. ==== Part Name			R 8	701 787	701		RD1/4PS1
D	251 252		RS1/10S104J			101 787			RD1/4PS4
	253 254		R\$1/10\$181J		R 7	_			RD1/4PS2 RD1/4PS2
	255 256		R\$1/10\$183J						ND174732
	257 258		R\$1/10\$133J		R 7	104			RD1/4PS3
	259 260		R\$1/10\$334J			705 706	710		RD1/4PS1
					R 7				RD1/4PS5
R	261 262		RD1/4PS682JL		R 7				RD1/4PS1
	263 264		RD1/4PS223JL		R 7				R\$1/10\$2
R	265 266		R\$1/10\$222J						,
R	267		RD1/4PS222JL		R 7	112			RD1/4PS2
R	268		RD1/4PS103JL	1	R 7	113 715	720		RD1/4PS4
					R 7	116			RD1/4PS1
R	269		RD1/4PS104JL	1	R 7	117			RD1/4PS2
	290		RD1/4PS103JL	. 1	R 7	118			RD1/4PS6
	301		RD1/4PS183JL						
	302 405		RD1/4PS223JL		R 7				RD1/4PS4
	303		R\$1/10\$473J		R 7				RD1/4PS1
К	304		RS1/10S223J		R 7				RS1/8S47
D	401 402		DD1 /4D0800 II			25 726			RD1/4PS8
	403		RD1/4PS822JL		R 7	21			RD1/4PS2
	404		RD1/4PS684JL RD1/4PS101JL	,	R 7	2.0			RD1/4PS1
	451 452 455 456		RD1/4PS153JL			29 730	202		RD1/4PS2
	453 454		RD1/4PS332JL			51 752			RS1/10S2
			,			53 754			RS1/10S1
R	457 458		RD1/4PS332JL				763 764		RS1/10S4
	459		R\$1/10\$103J						,
R	460		RS1/10S133J	1	R 7	57 758			RS1/10S1
R	461 462		RD1/4PS182JL	1	R 7	59 760			RS1/10S5
R	463 464		RD1/4PS222JL		R 7	61 762			RS1/10S1
				- 1	R 7	65 766			RD1/4PS1
R			RS1/8S102J	1	R 7	67 768			RS1/10S1
R			R\$1/10\$331J						
R	502		R\$1/10\$182J			769 770			R\$1/10\$2
R			RS1/10S821J		R 7				RD1/4PS5
R	504 505		R\$1/10\$101J		R 7				RD1/4PS1
	fac fac file and	***				774			RD1/4PS4
R R	506 508 519 808 507 512 803	813	RD1/4PS472JL		н з	804 809			RD1/4PM4
R			RD1/4PS222JL RS1/10S472J			205			RD1/4PS8
R			RD1/4P\$473JL		R 8				RD1/4PS8
	511		RS1/10S563J		R				RD1/4PS1
.,	J				R				RD1/2PS4
R	513		RD1/4PM221J			B14 816			RD1/4PS1
	514		RD1/4PS223JL						, 01
	515 807 811 817		RD1/4PS103JL		R 8	815			RD1/4PS4
	516		RS1/10S104J			851 852			RS1/10S2
	518 801		RD1/4PS102JL		R				RD1/4PS1
					R	854			R\$1/10\$3
R	520		RS1/8S152J		R	855			RD1/4PS2
R	521		R\$1/10\$102J						
	522		RS1/10S103J		R				RS1/10S3
	523 524		R\$1/10\$222J		R	901			RS1/10S0
	525		RD1/4PS823JL						

CAPACITORS	Mark ====== Circuit Symbol & No. ==== Part Name Part No.
Mark ======= Circuit Symbol & No. ==== Part Name Part No.	C 714 716 CKSQYB223K25
	C 718 CKSQYF473Z50
C 251 252 CKSQYB68	1K50 C 751 752 CEA4R7M35LS
C 253 254 CEA470M1	OLS C 753 754 CEALMP4R7M15
C 255 256 CKSQYB10	3K50 C 755 756 761 CKSQYB102K50
C 259 CEA100M1	6LS2
C 260 CEA101M1	OLS C 757 758 760 CEA100M16LS2
	C 759 CEA221M10L2
C 261 CEA4R7M3	5LS C 762 CEA220M16LS
C 270 CKSQYF47	ALM-THIOLI
C 301 302 308 CEA010M5	CLATIONIULZ
C 303 304 CEAR22M5	
C 305 306 CEA100M1	
C 307 CFA478M1	C 806 CEA100M16LS
0.000	257104110205
O Inc.	
C 401 CKSQYB10 C 402 CCPS1330	***************************************
0. 100	
C 403 CEA101M1	
C 404 CF4001W5	C 853 CEA220M16LS
C 451 450 COO CO.	
0. 150 151	
0 455 450	
0 457 450	
C 457 458 CEA4R7M3	
C 459 460 CYSOVR27	• Mother P. C. Board
A	
0 452	
C 454	
C FOR	
C 301 CKSQYB68	
C 502 507 509 511 811 CKSOVRIO	Unit Number:
	3 Y SO Unit Name · Tuner Ame Uni+ (Y FM = \$ 1000 / EW)
0. 500	3K50 Unit Name : Tuner Amp Unit(KEH-6100B/EW)
C 503 CCSQCH10	1 K 5 0
C 503 CCSQCH10 CCSCH101	1K50 J50 miscellaneous
C 503 CCSQCH10 C 504 CCSCH101 C 505 506 517 CKPYY103	1K50 J50 MISCELLANEOUS M16L
C 503 CCSQCH10 C 504 CCSCH101 C 505 506 517 CKPYY103	1K50 J50 MISCELLANEOUS M16L 3K25 Mark ======= Circuit Symbol & No. ==== Part Name Part No.
C 503 CCSQCH10 C 504 CCSCH01 C 505 506 517 CKSQYB47	1K50 J50 MISCELLANEOUS MI6L 3K25 Mark ======= Circuit Symbol & No. ==== Part Name Part No.
C 503 CCSQCH10 C 504 CCSCH101 C 505 506 517 CKPYY1031 C 510 CKSQYB47	1K50  J50 MISCELLANEOUS  M16L  3K25 Mark ======= Circuit Symbol & No. ==== Part Name Part No.
C 503 CCSQCH10 C 504 CCSCH101 C 505 506 517 CKPYY1031 C 510 CKSQYB47 C 512 4.7 μ F/16V CCH1005	1K50 J50 MISCELLANEOUS M16L 3K25 Mark ======= Circuit Symbol & No. ==== Part Name Part No
C 503 CCSQCH10 C 504 CCSCH101 C 505 506 517 CKSQYB47: C 510 CKSQYB47: C 803 807 CKSQYF47: C 512 4.7 μ F/16V CCH1005 C 513 514 CCSQCH10	1K50 J50 MISCELLANEOUS M16L 3K25 Mark ======= Circuit Symbol & No. ==== Part Name Part No
C 503 CCSQCH10 C 504 CCSCH101 C 505 506 517 CKSQYB47: C 510 CKSQYB47: C 512 4.7 μ F/16V CCH1005 C 513 514 CCSQCH10 C 516 CEAR47M5(	1K50 J50 MISCELLANEOUS M16L 3K25 Mark ======= Circuit Symbol & No. ==== Part Name Part No
C 503 CCSQCH10 C 504 CCSCH101 C 505 506 517 CKPYY1031 C 510 CKSQYB47:  C 803 807 CKSQYF47: C 512 4.7 µ F/16V CCH1005 C 513 514 CCSQCH101 C 516 CEAR47M51	1K50 J50 MISCELLANEOUS M16L 3K25 Mark ======= Circuit Symbol & No. ==== Part Name Part No
C 503 CCSGCH10 C 504 CCSCH101 C 505 506 517 CKSQYB47: C 510 CKSQYB47: C 512 4.7 μ F/16V CCH1005 C 513 514 CCSGCH101 C 516 CEAR47M51 C 518 CKSQYF473:	1K50 J50 MISCELLANEOUS M16L 3K25 Mark ======== Circuit Symbol & No. ==== Part Name Part No.  B750 IC 251 IC 301 IC 301 HA12134 D150 IC 401 D152 IC 451 601 TA755588 PD4213
C 503 CCSGCH10 C 504 CCSCH101 C 505 506 517 CKPYY1031 C 510 CKSQYB47: C 512 4.7 μ F/16V CCH1005 C 513 514 CCSQCH101 C 516 CEAR47M51 C 518 CKSYF473; C 551 552 CEHAQ4R71 C 553 554 CCSGCWB10;	1K50 J50 MISCELLANEOUS M16L 3K25 Mark ======== Circuit Symbol & No. ==== Part Name Part No.  B750 IC 251 IC 301 IC 301 HA12134 D150 IC 401 D152 IC 451 601 TA75558S PD4213 A50 IC 551 TA8215H
C 503 CCSOCH10 C 504 CCSCH101 C 505 506 517 CKSQYB47: C 510 CKSQYB47: C 512 4.7 μ F/16V CCH1005 C 513 514 CCSOCH10 C 516 CEAR47M5: C 518 CKSQYB47: C 551 552 CEHAQ4R71 C 553 554 CKSQYB10: C 555 556 CEHAQ4701	1K50 J50 MISCELLANEOUS M16E 3K25 Mark ======= Circuit Symbol & No. ==== Part Name Part No.
C 503 CCSGCH10 C 504 CCSGCH101 C 505 506 517 CKSQYB47: C 510 CKSQYB47: C 512 4.7 μ F/16V CCH1005 C 513 514 CCSGCH101 C 516 CEAR47M51 C 518 CKSQYB47: C 551 552 CEHAQ4770 C 555 556 CCHAQ470 C 557 559 560 CGEA224J8	1K50 J50 MISCELLANEOUS M16E 3K25 Mark ======= Circuit Symbol & No. ==== Part Name Part No.
C 503 C 504 C 505 C 506 C 507 C 507 C 508 C 508 C 508 C 509 C 510 C 511 C 512 C 513 C 514 C 516 C 518	1K50 J50 MISCELLANEOUS M16E BK25 Mark ======== Circuit Symbol & No. ==== Part Name Part No.  B750 IC 251 TA8162SN IC 301 HA12134 DD50 IC 401 AN6263N DLS2 IC 451 601 TA75558S L50 IC 501 PD4213  A50 IC 551 TA8215H LK50 IC 801 TA8214K A25 Q 251 252 DTC124ES IG 401 DTC124ES
C 503 C 504 C 505 C 506 C 507 C 510 C 510 C 510 C 510 C 510 C 512 C 513 C 514 C 516 C 516 C 517 C 518 C 618	1 K 50
C 503 C 504 C 505 C 506 C 507 C 507 C 510 C 507 C 510 C 508	1K50
C 503 C 504 C 505 C 506 C 505 C 506 517 C 6KPYY103 C 510 C 803 807 C 512 C 512 C 513 514 C 516 C 516 C 518 C 518 C 551 C 552 C 6HAQ477M C 555 C 557 C 559 C 6CHAQ470 C 558 C 6CHAQ470 C 558 C 6HAQ470 C 6THAQ470	1 K 50
C 503 C 504 C 505 C 506 C 507 C 507 C 508	1 K 50
C 503 C 504 C 505 C 506 C 507 C 505 C 506 C 510 C 803 807 C 803 807 C 512 C 513 C 514 C C513 C 516 C 518 C 516 C 518 C 518 C 518 C 6 517 C 6 518 C 7	N
C 503 C 504 C 505 C 506 C 507 C 505 C 506 C 510	NEST
C 503 C 504 C 505 C 506 C 505 C 506 C 510 C 803 807 C 512 C 513 C 513 C 514 C 516 C 518 C 518 C 518 C 518 C 518 C 518 C 6 513 C 6 514 C 555 C 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	N
C 503 C 504 C 505 C 506 C 505 C 506 C 507 C 510 C 803 807 C 512 C 513 C 513 C 514 C 516 C 516 C 518 C 618 C	N
C 503 C 504 C 505 C 506 C 507 C 505 C 506 C 510 C 803 807 C 512 C 513 C 513 C 514 C 516 C 516 C 518 C 517 C 518 C	N
C 503 C 504 C 505 C 506 C 507 C 505 C 506 C 510 C 803 807 C 512 C 513 C 513 C 514 C 516 C 516 C 518 C 518 C 518 C 518 C 518 C 518 C 6 518 C 6 518 C 6 518 C 6 518 C 7 518 C 7 519 C 7 7 519 C 7 7 7 7 1 9 C 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	N
C 503 C 504 C 505 C 506 C 505 C 506 C 507 C 510 C 507 C 510 C 511 C 512 C 513 C 514 C 516 C 518 C 62 C 631	N
C 503 C 504 C 505 C 506 C 505 C 506 C 507 C 510 C 803 807 C 803 807 C 512 C 513 C 513 C 514 C 516 C 516 C 518 C 519 C 510 C 511 C 51 C 5	N
C 503 C 504 C 505 C 506 C 505 C 506 C 510 C 803 807 C 512 C 513 C 514 C 515 C 518 C 516 C 518 C	N
C 503 C 504 C 505 C 506 C 505 C 506 C 510 C 803 807 C 512 C 513 C 514 C 516 C 518 C 610 C 518 C 610 C 518 C 610 C 611 C 61 C 6	1K50
C 503 C 504 C 505 C 506 C 505 506 517 C 510 C 803 807 C 512 C 513 514 C 516 C 518 C 610 C 518 C 610 C 518 C 610 C 611 C 61 C 6	1K50
C 503 C 504 C 505 C 506 C 505 506 517 C KSQYB47: C 510 C 803 807 C 512 C 513 514 C C516 C 518 C 610 C 555 556 C 610 C 557 559 560 C 62422416 C 558 C 651 C 651 C 701 C 702 C 703 C 704 C 705 C 704 C 705 C 707 C 708 C 708 C 709 C	1K50
C 503 C 504 C 505 C 506 C 505 C 506 C 510 C 803 807 C 510 C 803 807 C 512 C 513 C 514 C 515 C 513 C 516 C 516 C 518 C 610 C 518 C 610 C 611 C 61 C 6	1K50
C 503 C 504 C 505 C 506 C 505 C 506 C 505 C 507 C 510 C 803 807 C 512 C 513 C 514 C C513 C 516 C 516 C 518	1K50

		mbol & No. ==== Part Name				Circuit Symbol & No.	==== Part Name	Part No.
	804 806 807 808		DTC124ES	R	401 402			RD1/4PS822J
Q	805		2581243		403			RD1/4PS684.
_	809		DTB114ES		404			RD1/4PS101.
	810 811		2SB1243		451 452			RD1/4PS153
Q	812		DTC124ES	R	453 454			RD1/4PS332
-	851 852		2SC3327		457 458			RD1/4PS332
	853 857		DTA114EL		459			RS1/10S103
	854 855 856		DTC124TS		460			RS1/10S133
-	251 501 504 505 506 60	1 602 603 604 605 606	155133 155133		461 462 463 464			RD1/4PS222 RD1/4PS272
Ü	301 304 303 300 00	1 002 000 004 000 000						1017410112
D	502 802		155133		465 466			RS1/8S102J
	503		HZS3ROEB2		501			RS1/10S331
_	507		181555		502			RS1/10S182
	508 510 516 518		188133		503			RS1/10S821
D	651 652 653		1\$\$133	R	504 505			RS1/10S101
	654		HZS7R5JB2			519 808 813		RD1/4PS472
	655 752		155133		507 512	803		RD1/4PS222
	751		RD3R6ES81		509			RS1/10S472.
	861		ERC04-02F	•	510			RD1/4PS473
D	803		HZS6R8JB2	R	511			RS1/10S563
	804		HZS5R6J82		513			RD1/4PM221.
	805		MA700	R	514			RD1/4PS223.
-	851		HZS7R5JB2		515 807	811 817		RD1/4PS103.
	853		ERA15-02VH		516			RS1/10S104
D	855		188133	R	518 801			RD1/4P\$102
	856		HZS6R8JB2		520			RS1/8S152J
_	801 802		CCG1003		521			RS1/10S102.
-	804	Ferri-Inductor	CTF1042		522			RS1/10S103.
	805	Ferri-Inductor	LAU2R2M		523 524			R\$1/10\$222.
18	3 501		CWW1257	R	525			RD1/4PS823.
	501	Crystal Resonator	CSS1011		526			RD1/4PS473.
	. 804	Lamp	CEL1013	R	527			RD1/4PS392.
	805 806	Lamp 14V 40mA	CEL-147	R	551 552			RD1/4PS471.
	301 302	Semi-fixed 33kΩ(B)	CCP-381		553 554	555 556		RD1/4PS4R7.
VR	R 452 453	Volume	CCS-401	R	557			RD1/4PS223J
	R 451/S 452	Volume/Switch	CCS1144	R	558 559	560		RD1/4PS102.
2	451	Switch	CSG-207	R	601 602	603 604		R\$1/10\$473J
		LCD	CAW1069	R	605 606			R\$1/10\$104J
				R	651 653			RD1/4PS103J
SISTO	DRS			R	652			RD1/4PS102J
rk ==	====== Circuit Sy	mbol & No. ==== Part Name	Part No.	R	654			RD1/4PS122J
				R	656			RD1/4PS101J
	251 252		RS1/10S104J		751 752			RS1/10S221J
R	253 254		RS1/10S181J	R	753 754			RS1/10S124J
	255 256 257 258		RS1/10S183J RS1/10S133J	R	755 756	763 764		RS1/10S473J
	259 260		RS1/10S334J	۵	757 758			RS1/10S152J
**	•		, 1000070		759 760			RS1/10S561.
R	261 262		RD1/4PS682JL		761 762			RS1/105183
	263 264		RD1/4PS223JL		765 766			RD1/4PS152.
	265 266		RS1/10S222J		767 768			RS1/10S102.
	267		RD1/4PS222JL	••	,			
	268		RD1/4PS103JL	R	769 770			RS1/10S223.
n			NO 17 41 3 19 3 3 L		771			RD1/4PS561
R	269		RD1/4PS104JL		773			RD1/4PS154
	290				714			RD1/4PS470
			RD1/4PS103JL					RD1/4PM473.
R				×	AUA AII 4			
R R	301		RD1/4PS183JL	к	804 809			11017 41 m47 3.
R R R			RD1/4PS223JL RS1/10S473J	к	804 809			110 17 41 m47 3.

					Name Part No.	main				. Symbol & No	ra	rt Mame	Part No.
					RD1/4PS822JL		C 5	61					
	806												CEHAQ101M10
	810				RD1/4PS331JL RD1/4PS101JL		C 6	01 602					CEHAQ220M50 CEA2R2M35NP
	812				RD1/2PS471JL		C 6	51					
ı	814 816				RD1/4PS122JL		C 7	51 752					CEA4R7M35LS CEA4R7M35LS
	815				**********								***************************************
	851 852				RD1/4PS472JL								CEALNP4R7M1
	853				RS1/10S223J								CKSQYB102K5
	854				RD1/4PS102JL		C 7	57 758	760				CEA100M16LS
	855				RS1/10S333J								CEA221M10L2
•					RD1/4PS222JL		C 7	52					CEA220M16LS
	856				RS1/10S331J		C 81	0 1					CEA472W1612
R	901				RS1/10SOROJ		C 8	02 804					CEA472M16L2 CEA470M16L2
							C 80	5					CEA331M10L2
CAPACI	TORS						C 80	3 6					CEASSIMICE
11							C 80	8					CEATOOM16LS2
.ark =		Circuit	Symbol & No.	==== Part N	ame Part No.								02/1100/110202
С	251 252				CKSQYB681K50 CEA470M10LS CKSQYB103K50		C 80	9					CKSQYF184Z25
C	253 254				CEAATOMINIC		0 81	12					CEA470M16LS
C	255 256				CKSQYB103K50		C 85	1 852					CEA4R7M35LS
C	259				CEA100M16LS2		C 85	3					CEA220M16LS
C	260				CEATOTHIOLS								
					CEXIVIMIDES		Numb						
C	281				CEA4R7M35LS	Unit	Name	: !	ey Board	Unit (KEH-6	00SDK/WG)		
C	270					Mant			• • • • • • • • • • • • • • • • • • • •				
C	301 302	308			CKSQYF473Z50 CFA010M5011	mark	*****	====	Circuit	Symbol & No.	==== Par	t Name	Part No.
C	303 304				CEACIOM50LL CEAR22M50LL		2 00	1 000	000 004	****			
C	305 306				CEAR22M50LL CEA10CM16NPLL		0 01	1 902	013 984	905 906 907 Switch	908 909 91	0 Switch	
									913 914				CSG-253
	307				CEA470M16LS					Lamp 14\ Lamp 14\	4URA		CEL 10 13
	309				CEA220M16LS		11 00	2 003		Lamp 141	40 mA		CEL-147
	401				CKSQYB103K50	Unit	Numb	A					
	402				CCPSL330J50L				witch P	C. Board	•		
С	403				CEA101M10LS					C. BOBIG			
С	40.4					Mark	====	====	Circuit	Symbol & No.	==== Par	t Name	Part No
-	404				CEAORIMSOLL								
	451 452 453 454	003 604			CCSQCH330J50		D	1					F1SR35-100A
	455 456				CKSQYB332K50		\$	1 2		Switch (M	ute & Moto	r)	ESN1001
	457 458	-			CKSQYF333Z50		\$	3		Switch (M Switch (T	ape/Tuner)		HSK-126
·	431 430				CEA4R7M35L2								
С	459 460				040040030450	Unit							
	461 462				CKSQYB272K50	Unit	Name	: P.	. C. Board	Unit			
	463				CEAR33M50LS2								
	464				CEA100M16L2 CEA101M10L2	Mark	22222	****	Circuit	Symbol & No.	==== Part	Name	Part No.
C	501				CKSQYB681K50		s :						
					0 4 3 4 1 5 0 6 1 4 3 0		3	1		Switch (F	VD/REV)		ESH1002
C	502 507	509 511 8	111		CKSQYB103K50	Misce	llaner	ue Pa	rte liet				
C	503				CCSQCH101K50			743 / 61	its List				
C	504				CCSCH101J50	Mark:		==== (	irenit !	Symbol & No.	0		<b>6</b> N
	505 506	517			CKPYY103M16L						==== Part	Name	Part No.
С	510				CKSQYB473K25		HD 1			Head			
							<b>V</b> 1			Motor Uni	+		EPB1005
	803 807				CKSQYF473Z50		SO 1			Solenoid	•		EXA1033 EXP1001
	512		4. 7 μ F/16V		CCH1005		801						CEX1005
	513 514				CCSQCH100D50								(CEX1003
	516				CEAR47M50LS2								(0501000)
1.	518				CKSYF473Z50								
•					CEHAQ4R7M50								
	551 552												
С	551 552 553 554												
C C	553 554				CKSQYB102K50								
C C		60											



#### • FM/AM Tuner Unit

		KEH-6100SDK/WG KEH-5100SDK/WG	
1 -	51 60	DTA114TK RS1/10S473J	••••

#### • Tuner Amp Unit

	KEH-6100SDK/WG	KEH-5100SDK/WG
0 708	DTC124ES	
0 810 811	2SB1243	
0 812	DTC124ES	
Q 851 852	2SC3327	
0 853 857	DTA114EL	
Q 854-856	DTC124TS	•••••
D 701	181555	
D 702	ERA15-02	
D 703	ERA15-02VH	••••
D 852 854	188133	
D 855	155133	••••
D 856	HZSGR8JB2	
VR451/S452	CCS1144	CCS1146
IL 805 806	CEL-147	••••
B 801	CEX1008	CEX1009
R 463	RD1/4PS222JL	RD1/4PS272JL
R 723	RD1/4PS122JL	••••
R 724	RS1/8S473J	••••
R 802	RD1/4PS222JL	
R 814 816	RD1/4PS122JL	••••
R 815	RD1/4PS472JL	••••
R 851 852	RS1/10S223J	
R 853	RD1/4PS102JL	••••
R 854	RS1/10S333J	••••
R 855	RD1/4PS222JL	
R 856	RS1/10S331J	••••
C 307	CEA470M18LS	CEA470M16LL
C 309	CEA220M16LS	CEA220M16LL
C 403	CEA100M10LS	CEATOOMICLL
C 851 852	CEA4R7M35LS	••••
C 853	CEA220M16LS	••••

## • Key Board Unit

		KEH-5100B/EW KEH-5100SDK/WG	KEH-5101B/EW
IL 801	CEL1013	CEL 1013	
1L 802 803	CEL-147	••••	CEL-147
\$ 913	CSG-253	••••	••••

#### • Tuner Amp Unit

	KEH-6100B/EW	KEH-51008/EW	KEH-5101B/EW
Q 751 752	2502458		2SC2458
0 753 754	2SA1048		2SA1048
0 755 756	2SA1848		2SA1048
0 757 758	DTC314TS		DTC314TS
_			
Q 759	2SA1048		2SA1048
760	DTA114ES	••••	DTA114ES
0 810 811	2581243	•••••	
0 812	DTC124ES		
0 851 852	2SC3327	1	1
0 853 857	DTA114ES		
			1
Q 854-856	DTC124TS	••••	• • • • •
D 655	155133		155133
D 751	RD3R6ES81		RD3R6ESB1
D 752	155133		155133
D 851	HZS7R5JB2		
	CRASE ABOVE		
D 853	ERA15-02VH		
D 855	155133	•••••	• • • • •
D 856	HZSERBJB2	*****	• • • • •
VR451/S452	CCS1144	CCS1145	CCS1146
IL 804	CEL1013	CEL 1013	• • • • • • • • • • • • • • • • • • • •
IL 805 806	CEL-147		CEL-147
R 561 562		RD1/4PS473JL	
		KD1/4134133L	
R 751 752	RS1/18S221J		RS1/10S221J
R 753 754	RS1/105124J	•••••	R\$1/10\$124J
R 755 756	RS1/10S473J	•••••	RS1/10S473J
R 757 758	RS1/10S152J	••••	RS1/10S152J
R 759 760	RS1/105561J	1	RS1/105561J
R 761 762	RS1/10S183J		
			RS1/105183J
R 763 764	R\$1/10\$473J		RS1/10S473J
R 765 766	RD1/4PS152JL	•••••	RD1/4PS152JI
R 767 768	RS1/105102J	••••	RS1/10S102J
R 769 770	RS1/10S223J		RS1/10S223J
R 771	RD1/4PS561JL	1	RD1/4PS561J
R 773			
	RD1/4PS154JL		RD1/4PS154J
R 774 R 814 816	RD1/4PS470JL	••••	RD1/4PS470J
N 014 010	RD1/4PS122JL	1	
R 815	RD1/4PS472JL		
R 851 852	RS1/105223J		
R 853	RD1/4PS182JL	1	
			1
R 854	RS1/10S473J		*****
R 855	RD1/4PS222JL		•••••
R 856	R\$1/185331J	••••	••••
C 751 752	CEA4R7M35LS		CEA4R7M35LS
C 753 754	CEALMP4R7M16	1	CEALNP4R7M1
C 755 756	CKSQYB102K50	1	CKSQYB102K5
		1	
C 757 758 C 759	CEA100M16LS2 CEA221M16L2		CEATROMIELS:
C 760	CEA180M16LS2	•••••	CEA100M16LS
C 761	CKSQYB102K50	•••••	CKSQYB102K5
C 762	CEA220M16LS		CEAZZOM16LS
C 851 852	CEA4R7M35LS		
- 44. 445		1	
C 853	CEAZZOMIELS		1

# (!) PIONEER



ORDER NO. CRT 1094

CASSETTE MECHANISM ASSEMBLY

CASSETTE MECHANISM ASSEMBLY

CASSETTE MECHANISM ASSEMBLY

- This service manual is for cassette mechanism assembly used in car stereo components.
- · Refer to the service manual for individual models for details on sections other than the cassette mechanism assembly.

	Model	Service Manual	Model	Service Manual
With	KE-3050/ES	CRT1088		
music search	KE-3080/EW			
	KE-3080SDK/WG			
	KE-3050QR/UC	CRT1089		

	Model	Service manual	Modei	Service Manual
Without	KP-3120/EW, ES	CRT1085	KP-4440/UC, ES	CRT1092
music search	c search KP-3130/EW		KP-5011/US	
	KP-3120SDK/WG		KP-5550/UC, ES	
	KPH-4120/EW, ES	CRT1086		
	KPH-4130/EW			
	KPH-4120SDK/WG			
	KE-3020/ES CRT1087			
	KE-3030/EW			
	KE-3030SDK/WG		·	
	KE-2222/UC, ES CRT1090	CRT1090		
	KE-2515/US			
	KE-3011/US			
	KE-3232/UC, ES	7		

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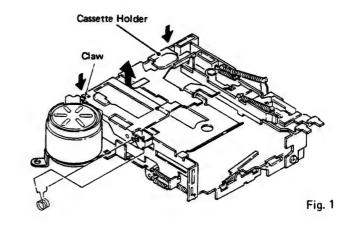


## 1. DISASSEMBLY

Note: Always use new washer and E-washer at the time of reassembling.

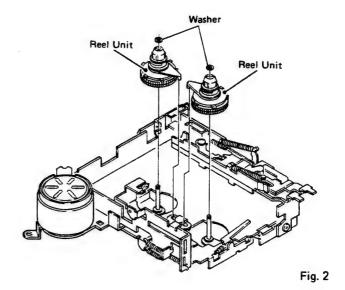
#### • Dismounting the Cassette Holder (Fig. 1)

- (1) Make the claw straight.
- (2) Remove the spring.
- (3) The cassette holder is gripped at 2 points, shown by arrows. So, shift it toward the left and pull it out from above.



## • Dismounting the Reel Unit (Fig. 2)

- (1) Take off the washer.
- (2) Remove the reel unit.



## • Dismounting the Flywheels (Fig. 3)

- (1) Take off the E-washer. Retain washer properly to ensure it doesn't get lost.
- (2) Remove the flywheels. Do not mistake the N and R flywheels (otherwise tape speed would change).

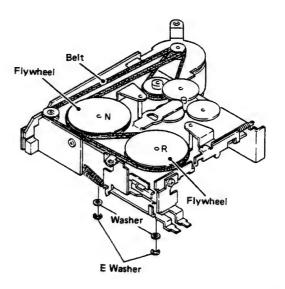


Fig. 3



## • Dismounting the Head (Fig. 4, 5)

- (1) Remove the P.C. board unit, after taking off its fastening screw.
  - Note: Take care not to change the setting of FWD/REV switch of P.C. board.
- (2) Remove the 3 springs.
- (3) Take off E-washer.
- (4) Remove the lever unit (EJ).

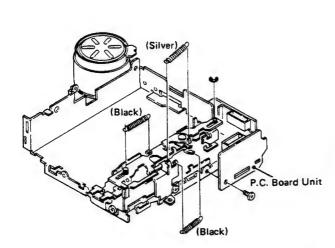
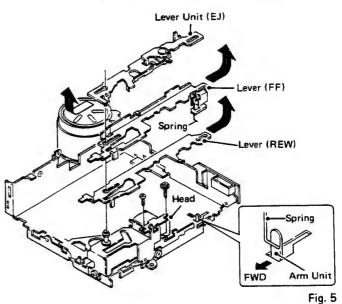


Fig. 4

- (5) Take off the lever (FF). When reassembling, make sure that the spring comes in front of arm unit.
- (6) Take off lever (REW).
- (7) Remove the head after taking off its 2 retaining screws.

  Note: The head can be dismounted, even without taking off the levers given in above steps (5) & (6).



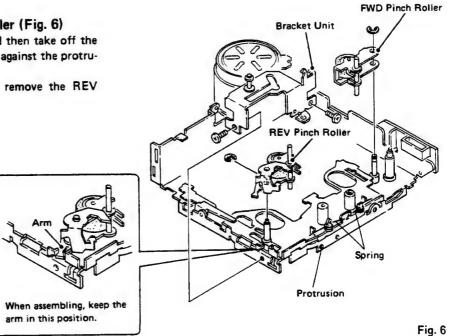
## Dismounting the FWD Pinch Roller (Fig. 6)

(1) Remove E-washer & spring, and then take off the FWD pinch roller.

#### Dismounting the REV Pinch Roller (Fig. 6)

(1) Remove the 2 retaining screws, and then take off the bracket unit, taking care not to hit against the protrusion.

(2) Take off E-washer & spring, and remove the REV pinch roller.





## 2. MECHANISM DESCRIPTION

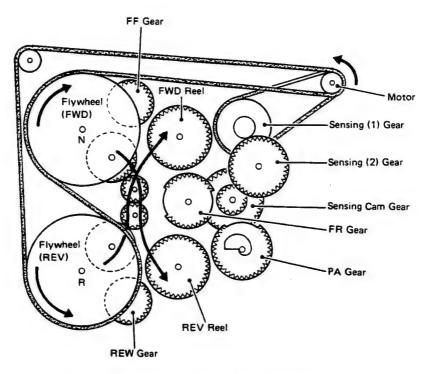
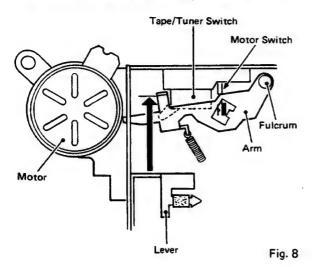


Fig. 7 Transmission of turning force at the time of PLAY (Flywheel -- Reel)

## • Loading & Playing the Cassette Tape

(1) When a cassette tape is inserted, a lever pushes against an arm, which then turns ON the motor and tape/tuner (tape side) switches, in this given order.



(2) When a cassette tape is set, the arm of Fig. 9 (collision preventing) gets depressed, putting the head base in forward movable state.

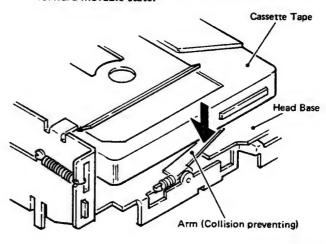


Fig. 9



- (3) As motor switch turns ON, the motor starts running, transmitting its rotations toward the arrow direction shown in the Fig. 10. As a result, flywheel (FWD) runs forward and flywheel (REV) runs backward.
- (4) REW gear then transmits the rotations of flywheel (REV) to REV reel, putting the mechanism in REW state and eliminating tape slackening (ATSC). At this time, the FWD reel is locked by the ratchet mentioned in step (14).

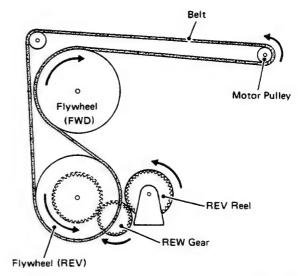
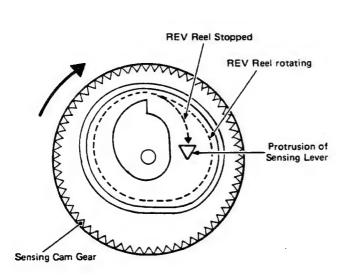


Fig. 10

- (5) In Fig. 11, the reel arms of FWD & REV reels are engaged on the sensing arm. A slight friction causes the reel arms to get locked onto the reels. While REV reel is rotating, the reel arms and sensing lever keep shifting laterally along the arrow direction 1 of Fig. 11. Right side movement of the reel arm is caused by the rotation of REV reel; while the left side movement is caused by protrusion of the sensing lever through the inner groove of sensing cam gear.
- (6) REV reel stops as soon as tape slackening is eliminated (the gear of reel is driven by REW gear).
- (7) As soon as the reel stops, the operation of above step (5) sends the reel arm toward the left. Consequently, the protrusion of sensing lever moves along the orbit of dotted line, causing the sensing lever to get pushed by cam and move along arrow (2).
- (8) Sensing lever turns the ATSC lock arm along the direction of arrow (3).



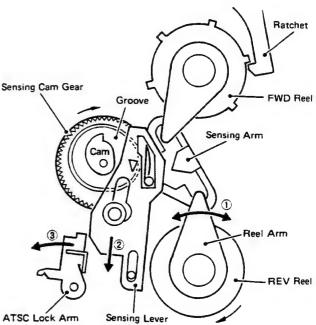
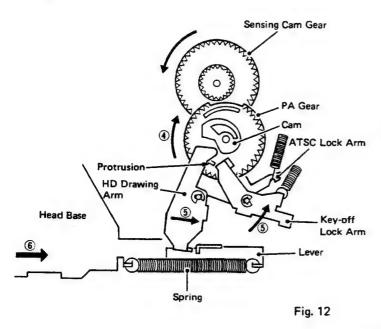


Fig. 11



(9) In ejected state, PA gear remains locked by ATSC lock arm, as shown in Fig. 13. The force along arrow (3) caused by the operation of above step (8), releases the lock if PA gear, whereupon the PA gear is made to rotate slightly along arrow (4) by the gear driving spring. As a result, the PA gear engages with sensing cam gear, and proceeds to turn through 1 more rotation. The cam of PA gear then causes the HD drawing arm and key-off lock arm to move along arrow (5). The HD drawing arm pushes against a lever, and a spring attached to the lever causes the head base to shift along arrow (6)



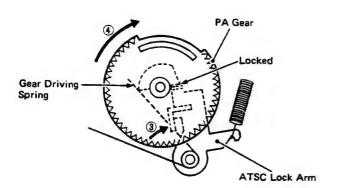


Fig. 13

#### (10) With Music Search (MS) (Fig. 14)

The key-off lock arm is pushed toward the outer periphery of PA gear by its cam. As a result, the key-off lock lever shifts along the direction of arrow (7), and the tip of solenoid attached at the end of lock lever is pulled in and gets locked into the solenoid (the solenoid is turned by motor switch).

Without MS (Fig. 15)

The key-off lock arm is pushed toward the outer periphery of PA gear.

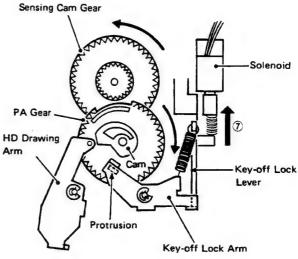


Fig. 14 Stopped state after turning through about 1 rotation (with MS)

(11) The key-off lock arm engages on the protrusion of PA gear, and concurrently the turning force of sensing cam gear is lost at the no-teeth part PA gear, causing the PA gear to halt.

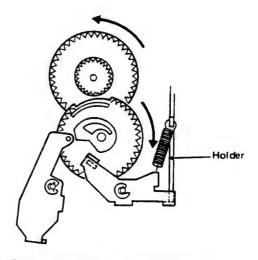


Fig. 15 Stopped state after turning through about 1 rotation (without MS)



- (12)Through a lever & spring, the HD drawing arm causes the head base to shift along the direction of arrow (6), in turn drawing out the HD. This movement of head base is accompanied by the following operation.
- (13) The spring A attached to head base causes the pinch roller to begin movement.
- (14)Point A of head base shifts the ratchet along arrow direction 8, causing the FWD reel to get detached from it
- (15) As the FWD pinch roller runs forward, arm A moves along the direction of arrow 9, causing arm B to get locked on FWD reel.

- (16) Point C of head base pushes against the pin of REW gear, disengaging the REW gear from REV reel.
- (17) Point B of head base pushes arm B along arrow direction (10), making the FWD reel free.
- (18) Spring A causes either the FWD or REV pinch roller to contact the capstan, depending on the existing status (FWD PLAY or REV PLAY) before the mechanism came to halt.
- (19) As point D of head base pushes against arm unit (idler), the play gear engages onto either the FWD or REV reel, depending on the existing status before the mechanism to halt.

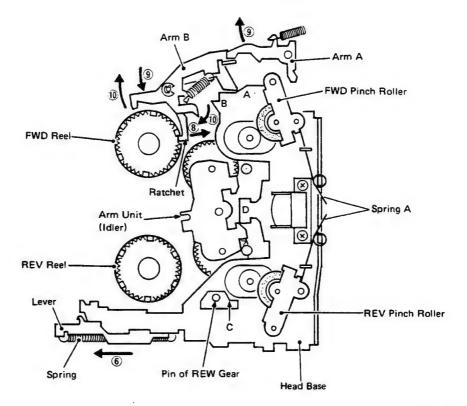


Fig. 16

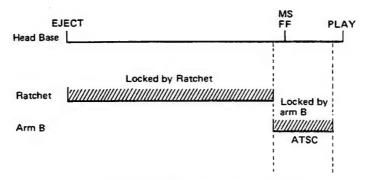


Fig. 17 FWD Reel locking timing



## Sensing Operation (Fig. 18, 19, 20)

#### O Auto

- While playing, since the sensing lever shifts laterally as given in above step (5), the cam of sensing cam gear never pushes against the sensing lever. Upon reaching the end of tape, the cam pushes against sensing lever, and point E goes in to push the arm along arrow direction 1.
- 2. The arm contacts the stopper of FR gear to stop the gear from running. Since the FR gear receives the force along arrow direction (2) of spring A, through REV pinch roller & arm (FR), it always tends to rotate along arrow direction (3).
- As soon as the arm disengages from stopper in above step 1, the FR gear engages with sensing cam gear, causing the arm to rotate until contacting the opposite side stopper.

4. The rotation of FR gear sends the arm (FR) toward arrow direction (14), in turn switching over the pinch rollers. This switch over is done by the movement of arm (FR), including that of the arm unit (idler) also.

#### Manual

- When the manual direction switch over lever of Fig. 18 is pushed, the arm moves along arrow direction 11.
   Further operation is identical to that in auto.
- If the manual direction switch over lever is held pushed, the inner protrusion of FR gear as shown in Fig. 19 contacts spring B of the arm, and stops after turning through half rotation.

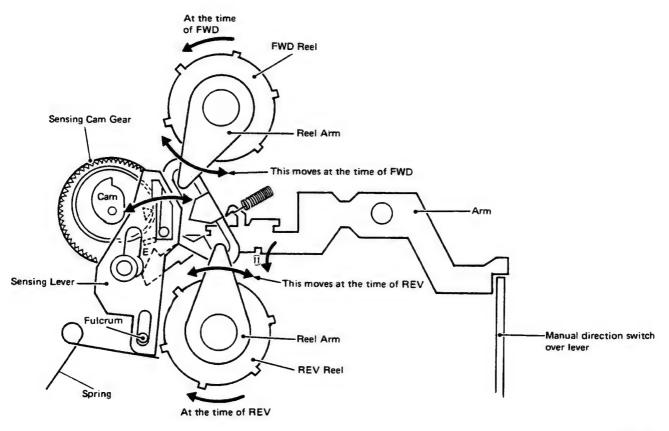
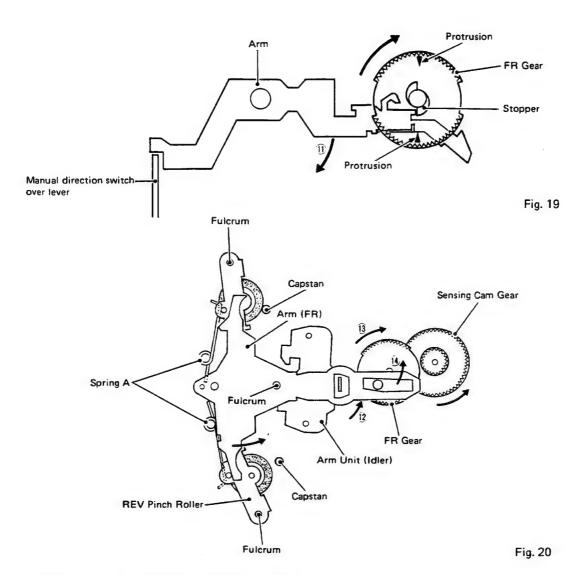


Fig. 18





### Sensing release Mechanism (when drawing out the Head)

 If the sensing lever is held pushed by sensing cam gear until the head is drawn out, after the lock of PA gear has been released by it, FWD/REV switch over takes place.

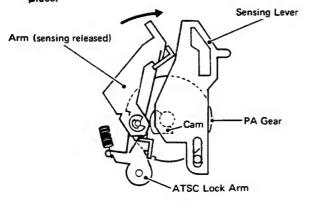


Fig. 21 Drawing out the HD (Sensing released)

 To prevent this, the arm (sensing released) is held pushed toward arrow direction, by the cam of PA gear, through ATSC lock arm, as shown in Fig. 21. This prevents FWD/ REV switch over by keeping the cam of sensing cam gear away from the sensing lever.

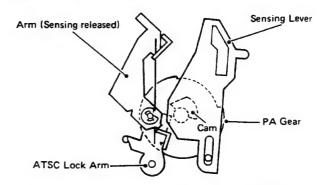
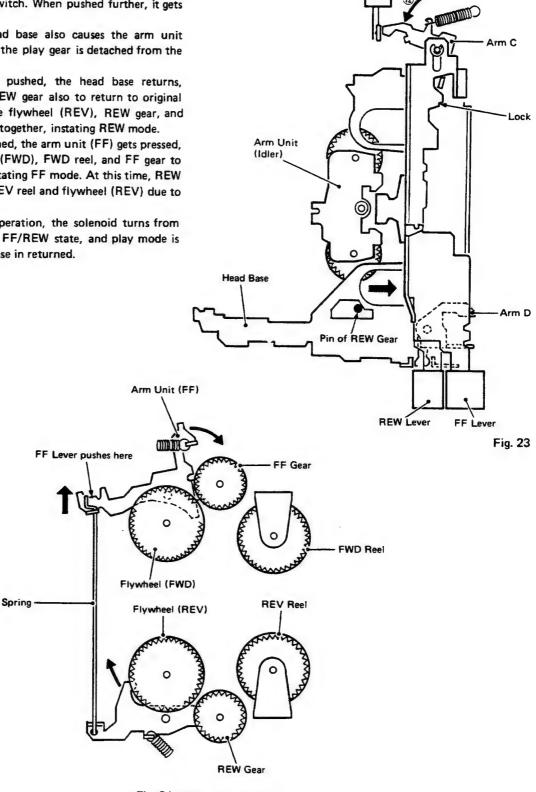


Fig. 22 At the time of PLAY (Sensing operation)



## • FF/REW Mechanism (when running FWD)

- 1. When FF, REW lever is pushed, arm D causes the head base to return upto FF/REW position. The lever makes arm C to rotate along arrow direction (12), which then turns ON the mute switch. When pushed further, it gets locked by arm C.
- 2. The returning of head base also causes the arm unit (idler) to return, and the play gear is detached from the
- 3. When REW lever is pushed, the head base returns, causing the pin of REW gear also to return to original position, whereby the flywheel (REV), REW gear, and REV reel get engaged together, instating REW mode.
- 4. When FF lever is pushed, the arm unit (FF) gets pressed, causing the flywheel (FWD), FWD reel, and FF gear to get engaged, again instating FF mode. At this time, REW gear detaches from REV reel and flywheel (REV) due to spring tension.
- 5. At the time of MS operation, the solenoid turns from OFF to ON while in FF/REW state, and play mode is instated as the head base in returned.



**Mute Switch** 

Fig. 24 At the time of FF



#### • EJECT

- If FF, REW levers are concurrently pushed, the arm gets caught at point F, sending the lever toward arrow direction.
- 2. Point G pushes against the arm of Fig. 23, causing the head base to return back.
- As the head base returns, arm E of Fig. 26 moves along arrow direction 3, in turn pushing the key-off lock arm.
   Thereby, the lock of PA gear gets released, and play state is cancelled.
- 4. Point H of the lever of Fig. 25 pushes against the cassette holder to eject the cassette tape.

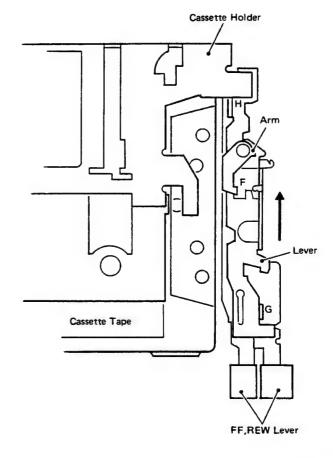


Fig. 25

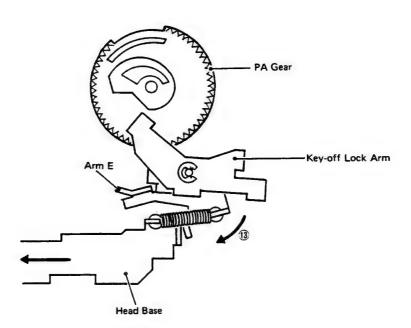


Fig. 26



## 3. ADJUSTMENT

## 3.1 AZIMUTH ADJUSTMENT (Fig. 27)

#### To Adjust

- Play "A" side of STD-341A (10kHz, -20dB). Adjust each screw for maximum output in forward and reverse directions.
- 2. Play "B" side in forward and reverse directions to confirm adjustment.

## 3.2 TAPE SPEED ADJUSTMENT (Fig. 27)

#### To Adjust

 Reproduce STD-301 (3kHz, -10dB). Adjust the semifixed resistor so that the frequency counter shows 3,010Hz (+30Hz, -30Hz).

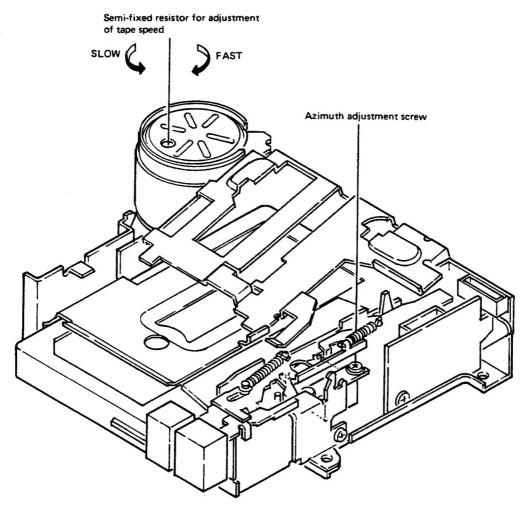


Fig. 27



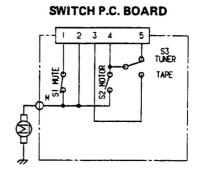
## 3.3 CHECK POINTS OF CASSETTE MECHANISM

Confirm the following items when replacing parts of the cassette mechanism.	■ Tape speed deviation:  3,000 <sup>+90</sup> <sub>-30</sub> Hz  (4.76cm/s <sup>+3</sup> <sub>-1</sub> %)  Using an STD-301, measure the speed at the start and end of winding and take the maximum value. Measuring time shall be 5 ~ 6 seconds.	■ Wow and flutter: Less than 0.20% (WRMS)  Using an STD-301, measure the wow and flutter at the start and end of winding and take the maximum value. If values indicated by the pointer vary considerably, adjust to 70% of the minimum and maximum values. Measuring time shall be 5 ~ 6 seconds.
Fast forward and rewinding time:	■ Winding torque:	■ F.F. torque:
95~115 seconds	39√65g·cm	110∿70g•cm
Using a C-60, set to fast forward and rewind, and measure the time with a stop watch.	Using a cassette type torque meter (100 g-cm), measure the minimum value while in the play mode. Measuring time shall be $5\sim6$ seconds.	Using a cassette type torque meter (120 g-cm), measure the value when the tape stops in the F.F. mode.
■ REW torque:	■ Back tension torque:	■ Cassette loading force:
110∿70g•cm	2∿6g•cm	Less than 1.5kg
Using a cassette type torque meter (120 g*cm), measure the value when the tape stops in the REW mode.	After setting in the REW mode without loading a cassette tape for 5 minutes, measure the back tension torque in the play mode, using a cassette type torque meter.	Push the center of the cassette and measure the force with a tension meter (3 kg).
g•cm), measure the value when the tape	loading a cassette tape for 5 minutes, measure the back tension torque in the play mode, using a cassette type torque	measure the force with a tension meter

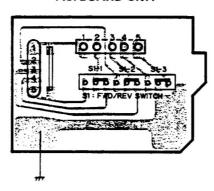


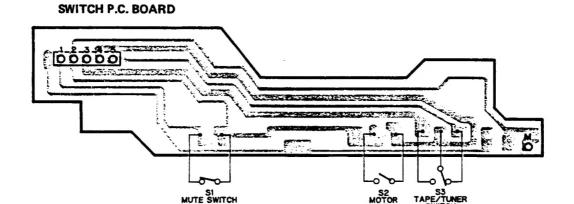
## 4. CIRCUIT DIAGRAM & PATTERNS

## • Without MS

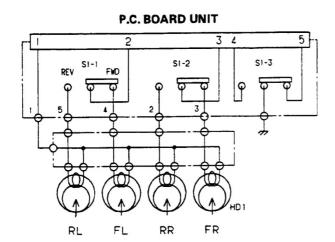


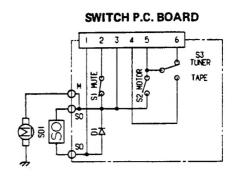
P.C. BOARD UNIT





#### • With MS





P.C. BOARD UNIT

